*Bjørn K. Wold, Stein Opdahl,*
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# Tracking Resource and Policy Impact

Incorporating Millennium Development Goals & Indicators and Poverty Reduction Strategy Paper monitoring across sectors

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| Tall kan ikke forekomme | Category not applicable | . |
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# Abstract

*Bjørn K. Wold, Stein Opdahl, Estrellita Rauan, Randi Johannessen and Ingvar T. Olsen*

**Tracking Resource and Policy Impact**
Incorporating Millennium Development Goals & Indicators and Poverty Reduction Strategy Paper monitoring across sectors

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The objective of the "*Tracking Resource and Policy Impact*" project is *"Meeting the Data Challenge"* from PARIS21 (2004) of providing a system for basic and general data for policy discussions and decisions for social sectors and other poverty issues, i.e. in education, health, water and sanitation, smallholder agriculture, and urban informal sector. The approach presented follows policy decisions and resources allocated across and within each sector, whether the resources are followed by an increased standard of services (and whether these services reach a greater share of the population), whether an increased standard and use are followed by higher achievements within each sector and finally whether higher achievements across the sectors are followed by reduced poverty. The *Tracking Resource and Policy Impact* incorporates the Millennium Development Goals and Indicators as well as Poverty Reduction Strategy Paper monitoring in the three social sectors, education, health, and water and sanitation, and aims to include even two income-generating sectors, smallholder agriculture and urban informal sector. The monitoring approach is designed for monitoring starting at the national level, and could be extended either upwards for international comparisons such as for the Norwegian partner-countries or downwards for local comparisons such as at district level. Measures and indicators are presented for each sector for all of the seven Norwegian partner countries in tables and graphs designed to fit different user needs. First, statistics for each step in the monitoring process are presented by sector. Second, statistics for impulse and effects are also presented by sector across two and two monitoring steps i.e. looking into the relationships between the different steps. The work has been initialised and funded by the Norwegian Development Agency, NORAD. An initial report was presented in 2002 (Wold, Olsen and Opdahl, 2002) and has served as the base for cooperation with our colleagues in National Statistical Office in Malawi and Uganda Bureau of Statistics in Uganda. The work is documented in this general report and two country specific reports to follow. The report shows that it is possible to establish and maintain statistical information to track resource and policy impact towards poverty reduction, other MDGs and PRSP objectives at the international level for the seven Norwegian main development partner countries. In general resources allocated to primary and overall health services and primary and overall school services are increasing since 1990. Increased resources go in general hand in hand with improved outputs and outcomes. But there are quite some cases where changes in inputs or outputs are not matched by changes in outcomes. Poverty data are still too short and irregular to give any trends. Some international databases tend to apply a policy of annually reviewing and adjusting national figures and if deemed necessary even adjusting single time series backwards - useful for some purposes, confusing for others. Further insight into tracking resource and policy impact requires country level data. Three main recommendations are presented: Recommendation 1 - Consider establishing a database for tracking resource and policy impact at the national level. Recommendation 2 - Consider establishing a permanent database for Norwegian users with data for the Norwegian development partner countries with annual electronic reports. Recommendation 3 - Before establishing a database for Norwegian users, consider whether to combine this with support to national level databases and a mirror database in Norway.

**Acknowledgement:** This project and report was initiated and financed by NORAD. We are grateful to our partners in NORAD and the series of international agencies who shared their ideas and experience with the team: DFID, UN ECOSOC, IDB, IMF, OECD/DAC, UN Population Division, UN Statistical Division, UNESCO, UNICEF, UNDP/HDR, UNFPA, WHO, and World Bank. Jan Erik Kristiansen, Lars Rogstad and Marit Vågdal in Statistics Norway advised us on presentation of data by graphs and maps. We have as far as possible incorporated approaches and advices but only the project team is responsible for the final approach, priorities and shortcomings.

# Contents

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# 1. Summary

The objective of the "*Tracking Resource and Policy Impact*" project[1] is "*Meeting the Data Challenge*" from PARIS21 (2004) of providing a system for basic and general data for policy discussions and decisions for social sectors and other poverty issues, i.e. in education, health, water and sanitation, smallholder agriculture, and urban informal sector. This includes:

- how much resources are allocated and spent for social sectors and poverty issues;
- how these resources are allocated within the sectors; what social sector services are produced and poverty reduction goals are achieved by the allocated resources;
- who are the users;
- how does the use of these services affect standard of living and quality of life; and finally
- to which degree do these changes in end goals give feedback effects.

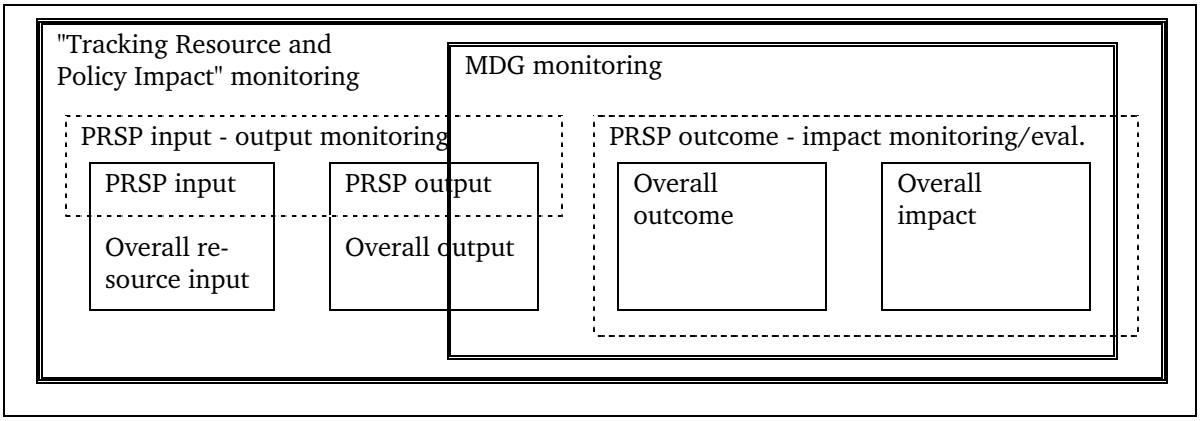
These objectives could be summarised in two main dimensions, *monitoring* and *process*. The objective is to monitor the overall policy process with its inputs, outputs, outcomes and end goals.

We have worked along two lines, a conceptual one and one on adaptation of existing measures and indicators. The conceptual line was to identify the effect steps from macro policy, selected macro level statistics, sector policy, sector allocation, internal sector allocation, service standard/ access to service, use of services, outcome/ status, poverty reduction and other end goal impact of changes in health, education etc., and finally feed back to economic, social and human development. The aim has been to identify a set of indicators which were well established, easy to obtain, and still provide the information needed. We stress that the objective is monitoring rather than impact evaluation.

The approach used in this report overlap with those of two international initiatives, the Millennium Development Goals (MDGs) and the Poverty Reduction Strategy Paper (PRSP) monitoring and evaluation as outlined in the following figure. The focus of PRSP is overall resource input and output monitoring while the MDG monitoring overlaps with output but is basically focusing on outcome and impact monitoring and evaluation. The Tracking Resource and Policy Impact monitoring approach presented in this report aims to cover the overall input-output-outcome-impact process.

[1] And its predecessor Basic Policy Data (Wold, Olsen and Oppdahl, 2002).

**1.1. Tracking Resource and Policy Impact monitoring compared to MDG and PRSP monitoring and evaluation**




Measures and indicators are presented for each sector for all seven Norwegian partner countries through two steps. First, statistics for each step in the monitoring process are presented by sector. Second, statistics for impulse and effects are presented across two and two monitoring steps for each sector.

The Norwegian Development Agency (NORAD) initialised the work on this report. In order to ensure timely and reliable statistics for the needs of NORAD and Norwegian development work, national cooperation and national ownership combined with institutional cooperation between South and North, is needed. Hence the work on this general report has gone parallel with Statistics Norway's cooperation with sister-organisations in Malawi and Uganda. This work will be documented in separate volumes. The statistical presentation chapter in this report presents data available at the global level. The focus is on health, education and water and sanitation due to lack of proper data for the smallholder agriculture and informal sectors.

Globally available data allow us to present descriptive data. Some preliminary findings are as follows:

- Social sector service, use and outcome improved generally over time.
- Data available at the global level gave a general idea about the impact chain, but to be able to understand the impact, reports at country level are required.
- In some cases the expected impact is well documented, but the general impression is mixed.

*For the health sector,* increased expenditures showed a general increase in immunisation rates with exceptions. Increases in immunisation rates corresponded to decreases in mortality rates except for Bangladesh and Zambia. Relating health indicators to poverty showed mixed results at the country level.
*For the education sector,* increased expenditures showed a general increase in enrolment rates and increases in enrolment rate corresponded to illiteracy drop with exceptions (Tanzania and Zambia).
*For the water and sanitation sector*, there was no data on resource allocation. Amongst Norwegian partner countries, more Asians than Africans had access to safe water while more Africans than Asians had access to safe sanitation.

In general, there were substantial data gaps, but it is still possible to compile and present data for the main variables at each of input, output and outcome level for these three sectors. Poverty data were however in many countries only available at one point in time and hence did not allow following trends nor to compare outcome and impact.

The online age has made it possible for anybody to access and download data from a range of databases. We will however strongly recommend users of international databases to review several as well as to follow them over some years before being ready fully to draw upon their utility.

The main conclusions could be summarised as follows:

- It is possible to establish and maintain statistical information to track resource and policy impact towards poverty reduction, other MDGs and PRSP objectives at the international level for the seven Norwegian main development partner countries.
- In general resources allocated to primary and overall health services and primary and overall school services are increasing since 1990. In general increased resources go hand in hand with improved outputs and outcomes. But there are quite some cases where changes in inputs or outputs are not matched by changes in outcomes. Poverty data are still too short and irregular to give any trends.
- International databases tend to apply a policy of annually reviewing and adjusting national figures and if deemed necessary even adjusting single time series backwards. This might improve consistency of each single time series, but also cause a discrepancy

towards nationally presented data, data presented in previous years, and opening for lack of consistency across two time series.
- Further insight into tracking resource and policy impact requires country level data.

Based upon these four main conclusions, three main recommendations are presented:
- *Recommendation 1 - Consider establishing a database for tracking resource and policy impact at the national level.* It is recommended to consider this approach for presenting data for MDGs, PRSPs and other overall policy plans in developing countries with available data.
- *Recommendation 2 - Consider establishing a permanent database for Norwegian users with data for the Norwegian development partner countries with annual electronic reports.* We recommend to consider organising a permanent database for Norwegian users including all the Norwegian partner countries, with annual reports based upon the approach presented.
- *Recommendation 3 - Before establishing a database for Norwegian users consider whether to combine this with support to national level databases and a mirror database in Norway.*

# 2. An Approach for Poverty Monitoring

## 2.1. Tracking Resource and Policy Impact

The objective of the "*Tracking Resource and Policy Impact*"[2] project is to provide basic poverty relevant data for policy discussions and decisions at macro level and sector level. This includes:

- how much resources are allocated and spent for social sectors and poverty issues;
- how these resources are allocated within the sectors;
- what social sector services are produced and poverty reduction goals are achieved by the allocated resources;
- who are the users;
- how does the use of these services affect standard of living and quality of life;
- and finally to which degree do these changes in end goals give feedback effects.

These objectives could be summarised in two main dimensions, *monitoring* and *process*. The objective is to monitor the overall policy process with its inputs, outputs, outcomes and end goals. On the other hand the objective is *not* to conduct an impact evaluation.

These objectives overlap with the objectives of two international initiatives, the Millennium Development Goals (MDGs) and the Poverty Reduction Strategy Paper (PRSP) for monitoring and evaluation. Each of these are presented and documented below, but first the scope of the Tracking Resource and Policy Impact is compared with each of the two others.

### 2.1.1. The scope of the Tracking Resource and Policy Impact project versus the MDGs

This project has developed in parallel with and well coordinated with the interagency work on the International Development Goals (IDG) and later the Millennium Development Goals (MDGs) as referred to above. The MDG goals, targets and indicators relating to social sectors and poverty reduction are all included in this work. However, the approaches are, different.

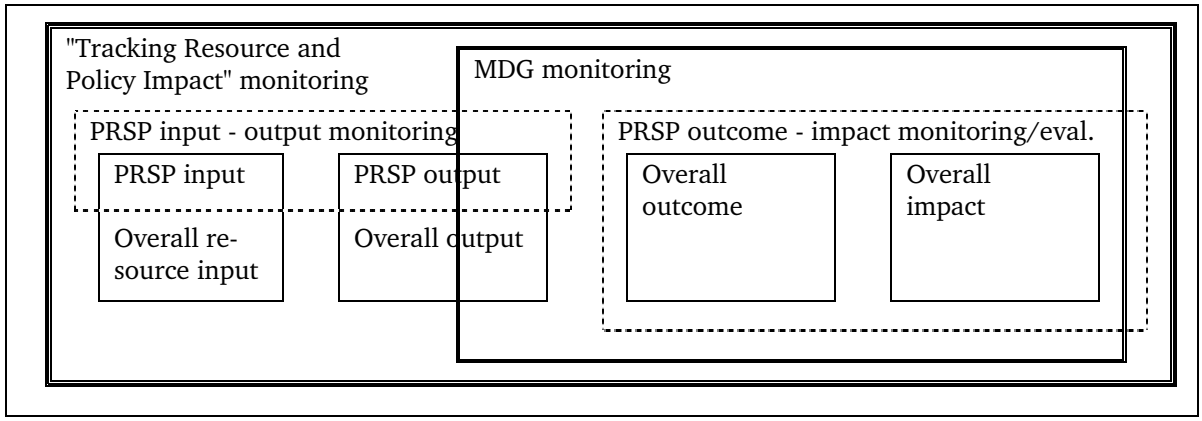
The MDGs and the predecessor IDGs are goals at various levels to be achieved within a certain time horizon, in general 2015. The Basic Social Policy Data project is designed to follow the process towards the same goals on an annual basis. But the aim is not to use such development goals as the exclusive source of standards and criteria and to monitor "goals-achievement in an MDG setting as such" (House E., 1980). In other words, the purpose here is not mainly to facilitate studies on how fast or to what degree these actual goals are achieved, but to make it easier to assess the relationship between the efforts made and the results achieved during different steps in policy development and implementation process ("system-monitoring or impact-evaluation in a broader sense").

The MDG approach has been developed as a global set of objectives and the MDG indicators are monitored both at the national and at a universal level. UNDP is particularly giving high priority to global MDG monitoring and a number of national UNDP offices have prepared national MDG reports working with national counterparts and plan to support national MDG reports in the years to come.

The Tracking Resource and Policy Impact approach has been developed in the North and focuses straight on building partnerships with relevant national agencies, usually a national statistics office in NORAD partner countries and the national statistics office in Norway, Statistics Norway. The Tracking Resource and Policy Impact initiative would then serve the need for policy relevant statistical information at country level as well as for comparative statistical information presented under a common umbrella. It is envisaged that both electronic and paper means will be utilised for dissemination.

[2] Initially Basic Policy Data

**2.1. Tracking Resource and Policy Impact monitoring versus PRSP and MDG monitoring**




### 2.1.2. The scope of the *Tracking Resource and Policy Impact* project versus the PRSPs

While the institutional history is different, the PRSP initiative is also a child of the international trend towards evidence based poverty reduction efforts. The PRSP work, the MDGs and this project have all developed in parallel. Both the PRSP monitoring and evaluation and the Tracking Resource and Policy Impact project address input - output and outcome - impact monitoring. This report uses the same theoretical PRSP based monitoring approach currently presented in the PRSP source book Prennushi, Rubio and Subbaro (2004)[3]. The PRSP based monitoring splits in two separate steps, first addressing input - output monitoring but limited to PRSP activities and second addressing outcome - impact monitoring/ evaluation of the achievements gained by not only PRSP activities, but even other activities and policies. In other words, the *de facto* PRSP monitoring and evaluation first comprises input - output monitoring of specific activities. Second, PRSP addresses policy outcome - impact evaluation on the same issues. However it is important to point out that outcome and impact can be caused or affected either by these activities or other activities which are not monitored. The Tracking Resource and Policy Impact approach does not pretend to follow specific activities. Instead it goes straight for policy monitoring with a comprehensive monitoring of all resource inputs - overall outputs - general outcome - final impact.

The PRSP are to be implemented at national level with national monitoring and evaluation plans. In fact, to implement PRSP activities and to establish a monitoring and evaluation system is a prerequisite for HIPC countries.

[3] An earlier draft (Rubio, Prennushi and Subbaro, 2001) presented a two step monitoring approach, which is now implemented around the world.

### 2.1.3. From MDGs to PRSP monitoring & evaluation to *Tracking Resource and Policy Impact*

The conceptual relationships and overlaps between the MDGs, the PRSPs and the Tracking Resource and Policy Impact approach is presented in the below.

## 2.2. MDGs & the predecessor International Development Goals

The PARIS21 initiative and multilateral development agencies such as OECD, UN, the World Bank Group and IMF started by the dawn of the last century actively promoting monitoring of the International Development Goals (IDG). The IDGs comprised 7 dimensions and 21 indicators for the 21st Century all summarising UN summit agreements throughout the 1990s (OECD/DAC 1998 a & b, UN 2001a). The 21 indicators presented in annex 1 represented the following 7 dimensions:

- Reduce the proportion of people living in extreme poverty by half between 1990 and 2015.
- Enrol all children in primary school by 2015.
- Make progress towards gender equality and empowering women by eliminating gender disparities in primary and secondary education by 2005.
- Reduce infant and child mortality rates by two-thirds between 1990 and 2015.
- Reduce maternal mortality ratios by three-quarters between 1990 and 2015.
- Provide access for all who need reproductive health services by 2015.
- Implement national strategies for sustainable development by 2005 in order to reverse the loss of environmental resources by 2015.

These indicators were already well established and an integrated part in several contexts. This included a) country level work to produce Poverty Reduction Strategy Papers (PRSPs) supported by World Bank and other donors, such as the recent one from Mozambique (Government of Mozambique 2001) and b) donor work such as the annual report from the British development agency (DFID, 2001).

The IDGs have developed into the Millennium Development Goals (MDG) comprising 8 goals, 18 targets and 48 indicators (UN, 2001a)[4]. The 48 indicators and 18 targets presented in annex 2 represent the following 8 dimensions:

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

UNDP has already prepared country level reports with the main aim to present the development of these indicators, such as one for Vietnam (United Nations 2001b). These reports have a more limited scope than the PRSP and they focus on the International development targets and Millennium Development Goals presenting a mix of qualitative development judgments, figures and graphs and a textual presentation of status and trends, challenges and supportive environment for the development dimensions. These reports are compiled by the UN Country Teams in collaboration with the governments. If such reports are produced in countries where there is possible NORAD approach presented in this report, the work should be closely coordinated and the national institutions should be assisted to build the capacity to take the lead.

A close scrutiny of the MDGs shows that this is a mix of well-known, applied indicators and which are identified from the policy perspective with little emphasis on availability. Hence, relying on the MDGs may provide very useful indicators from a policy point of view but will require special data-collection efforts. Thus there is a need for close scrutiny of MDGs availability at the country level. The two country level reports presented so far (e.g. Vietnam and Cambodia) show that at country level some indicators are not available and this includes the "new" indicators. Hence it is necessary to monitor whether the MDGs are universally accepted or else end up being simplified towards already well-established indicators.

In a review of the MDGs document it is assessed that they are all candidates for a system monitoring and evaluation approach, but one should be aware that this is still a discussion theme under the auspices of the UN Statistical Commission[5].

### 2.2.1. Poverty Reduction Strategy Paper monitoring and evaluation plans

In the annual meeting of World Bank and IMF at the end of 1999, a strategy for reducing the debt of the so-called Heavily Indebted Poor Countries (HIPC) was launched. The development of Poverty Reduction Strategy Papers (PRSPs) was made an integral part of the debt forgiveness package. In the beginning of 2003 more than 20 countries had presented PRSPs for the World Bank/IMF boards. All the PRSPs outline the need for PRSP monitoring and evaluation, thus plans are being prepared to meet this need.

The monitoring and evaluation plans should reflect the PRSPs of each country, but they are likely to build upon the approach presented in the Monitoring and Evaluation chapter of the PRSP poverty source book. As already mentioned, this approach has developed over the years (Rubio, Prennushi and Subbaro, 2001 versus Prennushi, Rubio and Subbaro, 2004). The PRSP poverty source book presents the same 4 types of indicators, inputs - outputs - outcome - impact, as the Tracking Resource and Policy Impact approach presents in this report. Both approaches stress the need to identify or set targets and track the impact. But at the same time the PRSP source book groups the 4 types of indicators under two groups: input and output under *intermediate indicators*, and outcome and impact under *final indicators*. The split between *intermediate indicators* and *final indicators* opens up for two types of monitoring and evaluation. First, monitoring of government activities i.e. PRSP inputs and outputs, and second, impact evaluation following the target indicators or outcome and impact indicators. Theoretically, the approach has however changed fundamentally from proposing these two steps approach in 2001 to a comprehensive approach in 2004. This report might be a useful tool in the implementation of this revised approach.

However, current national PRSP monitoring and evaluation plans are designed and are still being designed according to the 2001 approach. Two types of monitoring in the PRSPs are as follows:

- Management information systems with monitoring of PRSP activity inputs and their outputs.
- Impact evaluation with monitoring of outcome and impact indicators of the PRSP targets.

Hence, while the current PRSP poverty source book is advocating an integrated monitoring approach following resources from inputs, through outputs to outcome and impact, the national PRSP plans are prepared for a PRSP monitoring system split in two steps which are not integrated.

[4] In this report we follow the standard numbering system with MDG1 to MDG48 for the 48 indicators. Some indicators are really two or even three, letters are used thus the total number is 66 indicators.

[5] Refer to discussion under UN Statistics Division Web-site <http://millenniumindicators.un.org/unsd/mi/mi_goals.asp>

## 2.3. Does the indicator approach of the MDGs apply to NORAD?

The MDGs are designed for international monitoring, but there is still an issue of whether they apply to the needs of a national donor such as NORAD. Being more specific, there are two questions: first, whether MDG development targets and goals apply to NORAD's policy and second, whether the focus addresses only on targets and goals and leaves the development process apart.

In NORAD's new policy on result-based management, the overarching goal is poverty reduction in general and the MDGs are obviously capturing the essential dimensions. But the focus of NORAD's new policy is a broader one, including both the process leading up to one or more development goals and the end goals themselves. Even if a closer scrutiny of the MDGs shows that what is presented as end goals are rather outputs- and outcome dimensions, this report argues that the scope of the MDGs is far too limited.

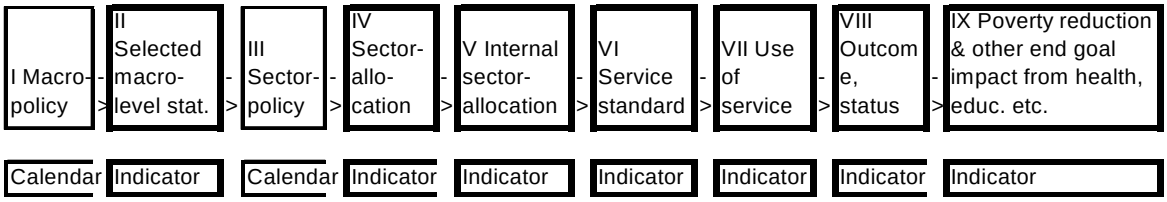
As already stated, the Tracking Resource and Policy Impact proposal takes the MDGs one step further by *an effect and impact approach* following four main steps from a) *inputs*: policy decisions and resource allocation, followed by b) *outputs*: access to and use of social sector service to c) *outcome*: achievements and status and d) the *impact* on poverty reduction and other end goals.

The approach presented here is for social sectors in general and poverty related sub-sectors of two main income generating sectors i.e. smallholder agriculture and urban informal sector. The focus for smallholder agriculture is on the rural population with crop agriculture as the main activity, and the focus for the urban informal sector is on unskilled labour. On a country basis, other groups such as pastoralists and agricultural estate workers should be considered as well.

As stated in the introduction of the chapter, the objective of the Tracking Resource and Policy Impact project is to provide basic and general data for national social sector policy and context. The reader will find the Millennium Development Goals listed not only under *Poverty and other end goals*, but also under *Outcome and status* and even under *Service standard and use*. However, the approaches are different. The Millennium Development Goals specifies goals to be achieved at different levels without focusing on how the goals are to be reached. The Basis Social Sector Data approach focuses particularly on how certain end goals can be reached by following the process.
The data system proposed would serve as a sound base for impact evaluation, but in order to conduct such an evaluation, an approach to handle the counterfactual issue (what happens if a policy is *not* implemented) is required.

The objective of this report is to monitor the process from resource allocation to final end goals for human development and the feedback to economic and social development. As already addressed, in order to fulfil this objective, it is necessary to follow the process of effects step by step.

**2.2. A Comprehensive Causal Chain**




## 2.4. Process of effects

To fulfil the objective, it is necessary to follow the process step by step, as follows[6]

1. **Macro policy**: General policy including macroeconomic policy, custom and foreign trade policy, external economic shocks, war, and civil war. Event calendar.
2. **Selected macro level statistics:** External economic conditions (terms of trade, export prices, oil price), internal economic trends (savings, investments, major annual production fluctuations such as in agriculture), public budget and accounts. *Statistics*
3. **Sector policy[7].** Regulations, financing systems, organizations, public/ private balance, decentralizing, human resource management. *Event calendar.*
4. **Sector allocation**: Allocation of public and private resources for social sectors. *Statistics*
5. **Internal sector allocation**: Allocation of resources within each sector by primary, secondary or tertiary service, by geographical divisions:

[6] Thick lines in 2.2 show the need for statistical indicators, while thin lines show the need for an event calendar of important economic and social events including such as natural catastrophes, external shocks and policy decisions.

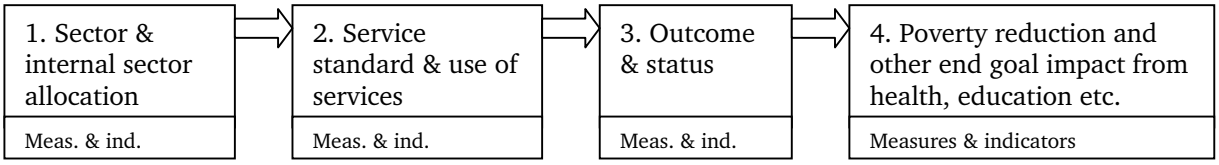
[7] Including sector policy implies including an event calendar.

provinces/ districts, and by centrality level: urban/ rural. *Statistics*

6. **Service standard/ access to service**: Standard of public and private services, disaggregated as above by service level, geographical divisions, and centrality, but also by target groups: by poverty/ income group, by ethnicity, by occupation, by demographic characteristics such as age, gender, type of household and life cycle. *Statistics*
7. **Use of services**: User frequency of public and private products and service offers, disaggregated as above. *Statistics*
8. **Outcome/ status**: Achieved status such as health status and literacy status, disaggregated as above.
9. **Poverty reduction and other end goal impact of changes in health, education etc.** Social and economic impact of changes in health, education, water supply, sanitation, social networks, welfare- and other targeted support for special groups.

The second step in this comprehensive list is background information. The first and third steps are event calendar type of information. For presentation purposes, steps four and five as well as six and seven are combined. This allows us to present a simplified chain of impulses and effects in four main steps, as follows:

**2.3. Simplified Causal Chain or Monitoring Chain**




Each of the steps in 2.3 requires a presentation of measures and indicators. Based upon the priority measures and indicators, it is also possible to present the relationship between conjunctional steps and one indirect relationship[8] as presented in the to follow.

**2.4. Statistics for the Monitoring Chain**

| **Statistics for each step in the monitoring process** | | |
|---|---|---|
| 1. (IV & V) Sector and internal sector-allocation | | Health<br>Education<br>Water and sanitation |
| 2. (VI & VII) Service standard & use of services. | | Health<br>Education<br>Water and sanitation |
| ) Outcome, status | | Health<br>Education<br>Water and sanitation |
| 4. (IX) Poverty reduction and other end goals | | |
| **Statistics for impulse and effect across two monitoring steps** | | |
| | **Impulse** | **Effects** |
| Relationship between level 1 & 2 | 1. Sector and internal sector-allocation | 2. Service standard & use of services. |
| Relationship between level 2 & 3 | 2. Service standard & use of services. | 3. Outcome, status |
| Relationship between level 1 & 3 | 1. Sector and internal sector-allocation | 3. Outcome, status |
| Relationship between level 3 & 4 | 3. Outcome, status | 4. Poverty reduction and other end goals |
| Feed back from level 4 | 4. Poverty reduction and other end goals | Economic Development |

[8] The indirect relationship referred to in 2.4 is feedback from level 4, under statistics for impulse and effect across two monitoring steps.

Measures and indicators for the four priority steps are presented in this chapter. Examples of statistics available at the global level for each of these steps and the relationships are presented in a separate chapter (see chapter 5). However, the final aim is to present country level statistics. There are two options for such a presentation combined with this methodological report:

- Presentation of country level information in an annex to the methodological report.
- Presentation of country level information in a separate report.

### 2.5. Principles in selecting recommended measures and indicators

The main direct goals for policy and/or resource efforts in social sectors are related to the final outcome and status of human welfare and development, i.e. health status, final educational outcome, consumption of clean water and proper sanitation, and absence of poverty. The indirect goals are related to the impact of these direct goals on ultimate end goals i.e. human, social and economic development. Hence we have started the selection process by identifying and reviewing international recommendations for measures and indicators within these areas. Over the last years there has been a clear focus on goals. While there are some discrepancies, we are quite convinced that the package of measures and indicators presented would include all widely recommended ones. There are discussions regarding ideal measures and indicators. The MDGs are more or less settled but for a number of others, agreement is still quite far away. In order to stay within reasonable limits, we selected a "proper package" reflecting a balanced set of measures and indicators. In the next chapter, all measures and indicators considered and those given priority are presented.

From the selected sets of measures and indicators, we have moved backwards, selecting internationally well known and used measures and indicators of resource allocation, access and use which are likely to affect the outcome and status and the end goals.

Finally, we have included some background measures and indicators that provide necessary information and are needed to prepare common constructed variables for further analysis.

We started with the presentation of recommended measures and indicators for each step in the process of effects. Then we gave recommendations for presenting the relationship between the steps.

### 2.6. Monitoring, not impact evaluation

It is important to stress that the objective is *to monitor the process* rather than to conduct an impact evaluation. The data system proposed would serve as a sound base for impact evaluation. But in order to conduct such an evaluation, an approach to handle the counterfactual issue is required either by an economy wide model approach or a well-designed *ad hoc* sector analysis. Three main strengths of a systematic monitoring system should be stressed, as follows:

- A systematic monitoring system would be able to tell whether the planned policy (or program) impact materialises and whether the magnitude of the impact is as planned and expected. If not, alarm bells should ring and further studies are required.
- A systematic monitoring system would allow for trends to be established and monitored. Stable trends are the best indicators of the kind and level of impact to expect from a given resource allocation or another policy decision.
- A systematic monitoring system is well designed for dissemination (by paper and electronic means) and use by both policy makers and public at large.

#### 2.6.1. Program and project impact evaluation

One great advantage with a standardised approach is that it is easy to organise an extra module to provide data for program and project impact evaluation. For programs and projects targeted towards specific areas or groups (e.g. geographical areas, socio-economic groups, age and gender groups) a planned survey could be extended by an extra sample to provide information from that specific group. By matching participants with non-participants with similar background and activities, group comparison and measurement of project or program impact is possible. While it is clearly not recommended to include program and project evaluation in the core approach, it is recommended to reflect on this possibility as an add-on module. It is however considered outside the scope of this initiative as such to include program and project evaluation. (But the data that will be collected will improve the possibilities of assessing the validity of program and project evaluations).

#### 2.6.2. Policy impact evaluation

Again the issue is how to handle the counterfactual situation. At policy level this requires a dedicated approach. Economy-wide policy impact will typically be evaluated by applying a macro-economic Computable General Equilibrium (CGE) model. Impact evaluation of sector policy will require sector wide models.

The data to be collected by a systematic approach as suggested in this paper might serve well as a data base for such models, but the development of such models are outside the scope of this work.

### 2.7. Food Insecurity and Income Generating Activities

The guiding principle of the statistical approach presented is to follow resources from input - output

monitoring towards outcome - impact monitoring. This is done step by step, starting with input - output, where input-resources are considered an impulse giving an output-effect. For example, financial resources from Ministry of Education giving a nation-wide grid of primary schools and a certain proportion on children attending primary school. In the next step the output i.e. the grid of primary schools and the children attending primary school is considered an impulse giving an outcome effect of children achieving literacy. In the final step, the outcome i.e. the literacy level is considered an impulse giving an end goal effect of higher employment and lower poverty. This guiding principle has been chosen in order to follow the success or failure in designing and implementing a policy. This type of monitoring process can help ensure a development towards fulfilling the Millennium Development Objectives in 2015. For social sectors such as health and education, this is conceptually straightforward. The great challenge has been to identify internationally acknowledged indicators which are theoretically interlinked and for which data are available or easily could become available.

For some issues as water supply and sanitation, this is still conceptually simple. The challenges might be larger for other issues both theoretical and practical.

### 2.7.1. Supply and demand versus input-output-outcome-impact monitoring

For the income generating sectors such as smallholder agricultural production and informal urban businesses and employment, the conceptual challenges are different. There are two main options for statistical presentation, an economic model demand and supply approach or the input-output-outcome-impact approach presented here. In theory, both demand and supply will comprise domestic and international demand and supply. The markets may be more or less domestic due to the effects of tariffs and quotas, large transaction costs, or both combined. Hence in most countries some markets are either predominantly domestic or international. In either case, price will be the central issue for monitoring, but for markets fluctuating between domestic and international (due to either exports or imports), there is also a need to monitor the size of the market including exports and imports.

Food markets are usually monitored by the agricultural sector such as by ministries of agriculture. The FAO food balance sheet approach and the early warning approach are used in most countries. Hence such monitoring is not addressed in this document.

The informal sector is different. Informal production of commodities might compete with domestic formal sector production and import. The informal producers of commodities will however respond to consumer needs and focus on niche-products to avoid competing with the formal sector. Trade and production of services are even more adapted to local demand and focus on niche-services in urban areas. Hence it would make sense to monitor the aggregate demand of the urban population. This might be the only sub-sector of the economy facing trickle down effects i.e. when the upper class and the upper middle class get richer, they might hire more poor people or demand more goods and services from the poor. In either case, the increase in income will "trickle" down to the lower classes.

Given this more limited need for monitoring of size and level of these markets, the main monitoring approach presented here will input-output-outcome-impact monitoring.

For both of these two sectors, there are elements of public and private service delivery, public and private infrastructure, which is a part of the wider economic environment and opportunities or lack of opportunities. There is a real difference in data availability for agriculture and the informal sector. For the agricultural sector, statistics and statistical monitoring has been an integrated part of the sector on global basis through FAO for the last 40 years, while statistical information for the urban informal sector is fragmentary or totally missing in most countries. However for both sectors, there are huge data gaps.

### 2.7.2. Food Insecurity

The World Food Summit in Rome (1996) defined food security as follows: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

When the Millennium Development Goals were agreed upon during the UN Millennium Summit and General Assembly in 2000, it was agreed that the first MDG would be to eradicate extreme poverty and hunger. Two targets were identified, poverty and hunger reduction. The second target specifies that hunger be reduced by half. The target is to be monitored by two indicators, prevalence of underweight children and the proportion of population below minimum level of dietary energy intake. Monitoring information for the former is collected through health or demographic surveys or dedicated nutritional and anthropometric surveys. Monitoring information of dietary intake can be calculated from household budget surveys, but this is usually not done at the national level. However FAO calculates this information based upon a statistical model of standard distribution of dietary intake based upon total household expenditures.

### 2.7.3. Smallholder Agriculture

From our perspective, there are needs for statistical monitoring along four overlapping sub-dimensions:

- Public and private services such as extension services and public input provision and marketing services.
- Public and private infrastructure such as irrigation, rural feed roads, dip tanks and other veterinary services for cattle, and availability of producer-organisations
- Agro-economic environment and its context such as soil quality, agro-meteorological conditions, and land distribution; and
- Economic opportunities and challenges such as marketing and consumer and producer price-regimes.

While you find substantial similarities across the sub-dimensions and several of the elements listed arguably could be categorised within one of the others. Yet you still find two distinctively different logics within the two formers versus the two latter sub-dimensions and hence we address them as two dimensions rather than four sub-dimensions.

*2.7.3.1 Public and private services and infrastructure*

Conceptually smallholder agricultural services and infrastructure are not different from education, health, water and sanitation. We focus on extension service, research and feeder roads including resources allocated, service and infrastructure available, production for consumption and marketing and impact on poverty and hunger reduction.

*2.7.3.2 Agro-economic environment, context, opportunities and challenges.*

Agro-economic conditions are essential in determining limits of livelihoods for smallholders, but for monitoring you would focus on relative resources. Information on agro-economic conditions is obviously interesting for analysis across provinces, districts and socio-economic groups and justifies background statistics[9]. But for monitoring the perspective would be on issues potentially affected by policy-changes such as prices and marketing opportunities. It is essential to retain a consumer perspective, a producer perspective, but also an efficiency perspective such as the share of end-consumer price retained by the producer.

[9] In areas with fertile soil, even smallholders who do not risk buying fertilizers may gain from maize research, while in areas with acid soil only better off farmers who could risk buying lime and fertilizers will gain. Hence maize research might be pro-poor policy in some areas while only cassava research deserves that label in others.

### 2.7.4. Informal Urban Business and Employment

*2.7.4.1 Data needs*

For this sector, the gap between data needs and data availability is substantially larger than for the others. Ideally we would like to present data on resources devoted to support the informal sector, the output of these resources, the outcome and impact. We would like to include three lines: direct support, direct services and indirect services as follows:

- Public or private work programs, such as public work schemes, cash for work, food for work and subsidised or fully funded community development programs and NGO activities.
- Direct support such as extension or advisory services, credit schemes, entrepreneur and NGO programs.
- Indirect support through education programs such as adult learning programs, artisan training programs or more formal vocational training.

For each line we would have liked to measure *resources allocated* and *output measured* as activities or special programs available at local levels or number of persons participating. We should also have *outcome measured* as informal sector establishments, informal sector employment, and overall unskilled or low skilled employment.

*2.7.4.2 Data availability*

Unfortunately such data are hardly available. Data for resource allocation and outputs might in many cases be available at activity level through management information system (MIS) systems. Data might also be available at outcome or achievement level on employment, but these two types of statistics do not have the same coverage and hence are not consistent. Statistics covering all steps along one or more of these lines for the total population or at least a major share is hardly available at policy level.

In a global perspective, statistics in this area are rather dominated by the need for information of production in economic terms and employment. In many countries the informal sector is negligible or labelled the grey or even black economy. Both IMF and UN Statistical division focus on the formal private sector and the public sector. Almost by definition, information on employment in the informal sector fluctuates and is difficult to obtain. The ILO policy seems to reflect that the priorities of the two sector stakeholder-groups, the national employers organisations and the labour unions, are on the formal sector. The current ILO priority even in developing countries is on *decent work*[10]. The lack of priority for the informal sector is justified by the need to ensure decent work from the

[10] Refer to ILO web-site for definition of *decent work*.

very start due to the obstacles of trying to change a work standard once it has settled. This is a convincing argument but leaves the informal sector with few organisations to promote the need for statistics. Informal sector employment is however still one of ILOs 20 key indicators of the labour market (KILM). ILO also presents some information on informal sector employment as share of total employment for 54 developing countries[11].

From an income generating perspective, there are needs for statistical monitoring for both the business dimension and the employment dimension as follows:

- urban informal sector with a focus on both petty trade and artisanal production, and
- employment opportunities for unskilled and low skilled workers in both informal and formal sectors

*2.7.4.3 Urban informal sector with a focus on both petty trade and artisanal production*

While the informal sector in many developed countries are established to avoid tax, the causes behind the informal sector in developing countries are more mixed. One reason is of course to avoid strenuous regulations, another reason is to fill gaps in regular production of goods and services, a third reason is that a flexible operation without a fixed location is cheaper and hence offers cheaper service and production, and a fourth reason is obviously the lack of alternative livelihood strategies for the urban poor. Self-employment in the informal sector is ranging from an alternative for young aspiring businessmen and women with initiative and energy to marginalized groups as handicapped and resource strapped mothers without kin and the last resort of income before turning into crime. Hence the return for work is fluctuating more than in most sectors. It is rather the regulations for the alternatives, which determines the size of each sub-sector than the regulations of the sector itself. Hence the monitoring focus should be on size and economic returns rather than causes.

*2.7.4.4 Employment opportunities for unskilled and low-skilled workers in both informal and formal sectors*

As stated one of ILOs KILMs is the share of employment in the informal sector. We would argue that this is essential information, but equally important is to monitor the overall employment opportunities for unskilled workers and for low skilled workers.

In a developed economy you would expect that financial and monetary policies are the primary causes for low or high unemployment. However in developing countries, you do not find a similar borderline between employment and unemployment, since the informal sector serves as a borderline. The informal sector with its range of employment arrangements and salary (i.e. payment in cash and payment in kind), ranges from employment well beyond some of the formal employment like petty street-vendors selling candies by the piece or just selling second hand magazines. Hence while some informal sector activities give a reasonable outcome, some activities give very little. Real monitoring of the informal sector would require regular collection of income and time information which is hard to expect except like every 5$^{th}$ or 10$^{th}$ year.

We would then rather advocate a focus on the size of informal sector employment combined with formal sector employment of unskilled and low skilled workers.

However in countries with special public works, food-for-work or cash-for-work programs, we would strongly advocate to follow resources allocated for such programs and jobs created and maintained. However, this is usually included in a Management Information System on input - output monitoring than a statistical impact monitoring approach.

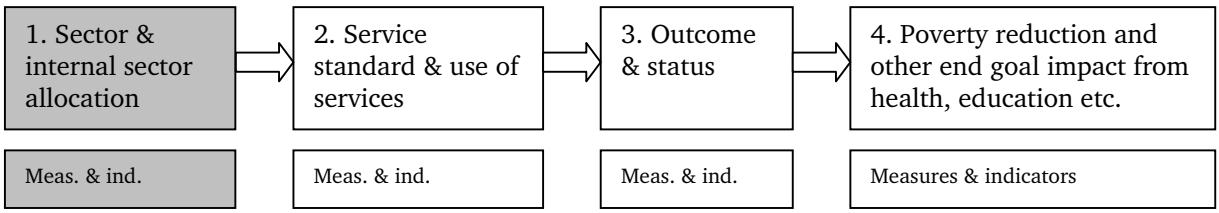
[11] Refer to ILO web-site, http://www.ilo.org.

# 3. Recommended Measures and Indicators

## 3.1. Introduction

While following the current global focus on international development goals, the presentation of measures and indicators intend both to monitor the trends towards fulfilling the end goals as well as tracking the resource and policy impact. The presentation starts by addressing overall resource allocation and policy across and within sectors. Then impact on outputs and outcomes within each sector is tracked and towards the end tracking the overall end goal impact and feed back. Each paragraph will start with a graphical reminder of the four steps and highlight the step currently in focus by a grey shadow.

**3.1. Monitoring chain - sector and internal sector resource-allocation**




## 3.2. Sector and Internal Sector Resource-Allocation

### 3.2.1. Sector policy

Both for sector policy and macro policy we expect information on legal framework and policy decisions to be available mainly at the national level and be presented in the form of event calendars.

### 3.2.2. Sector resource allocation and Internal resource allocation

During the last decade, there has been an increasing interest in information on the share of resources allocated to primary social service and/or to social sector expenditures in general. The 20/20 initiative at the UN Social Summit in Copenhagen in 1995 was instrumental in ensuring such a focus on resource allocation for (preventive) health and (primary) educational services (United Nations,2004b). Still relatively little work has been undertaken to develop internationally acknowledged standards in this area and both targets and indicators are discussed. The original focus was on expenditures i.e. any type of education and health expenditures. Later a revised proposal focused on a 15/15 initiative aiming at securing a budget share of 15 percent for primary education and health. Others have suggested also adding expenditures for secure water supply and sanitation. Currently the pendulum emphasis seems to move back towards the original 20/20 initiative. The Social Summit in 2000, 5 years after Copenhagen should guide the main emphasis for presentation of measures and indicators.

Since our objective is to follow the process, we would, in any case, need statistics both on resource allocation across sectors and within sectors such as primary, secondary and tertiary education.

All countries will present statistics for public resource allocation across sectors at the national level. All countries will also present disaggregated information, i.e. resource allocation within sectors. But many countries tend to present resource allocation within each sector by type of administrative expenditures while functional breakdowns are not presented.

For many years, the main data source for presentation of sector resource allocation has been the "Government Finance Statistics Yearbook" presented annually by IMF. This publication was redesigned in 1989. Up to and including 1988 (IMF, 1988) this yearbook

included disaggregation of data for both expenditures and revenues, including information on intra-sectoral resource allocation within the educational and the health sectors. The disaggregation was somewhat limited. For the health sector there is Primary and Secondary Education combined versus Tertiary Education and for the health sector, expenditures were split on Hospitals, Clinics & practitioners, Medicaments, prostheses, etc. However from 1989 and up to the present, IMF (1999) decided to present less detailed information and hence some of the data series were discontinued in 1988. The IMF statistical department continues to collect disaggregated information but does not enter the data in the computer nor presents the information in the annual statistics. Thus, there are reasons to believe that this information will be available for some countries at the national level.

The reader might assume that developed countries present more disaggregated information. But there are no systematic trends here. Often OECD countries would rather disaggregate resource allocations within each sector across administrative breakdowns rather that functional, while developing countries in many cases, present resource allocation across functional breakdowns. The reader might speculate that this is a strategy to satisfy donor requirements in order to gain additional donor support, but we have no information on this issue.

Around half of the countries where NORAD has a long-term partnership did submit intra-sector resource allocation to IMF, which in turn presented this on an annual basis up to 1988. This indicates that this information is available from quite a large share of the countries as of the present. Unfortunately even Norway did not submit the intra-sector resource allocation data to IMF during the 1980s.

In order to follow the effects of sector resource allocation and intra-sector allocation, we would obviously need more details. There is unfortunately no systematic global presentation of such information within the institutions visited so far. However the World Bank presents very interesting documents for so called Public expenditure review (World Bank, 1996) and a number of country level experiences, which are summarised the following year (World Bank, 1997). Given that some details are presented in the IMF publications up to 1988 and a renewed focus on public expenditures (World Bank, 1996), there are realistic possibilities that this information will be available at the national level.

Private resource allocation for social sector service comprises both free or subsidised services and commercial provision. Information should ideally include the following sub-sectors:

- Free or subsidised social sector services usually provided by NGOs in an institutional scale.
- Traditional social services provided at commercial terms such as traditional medicine and artisan apprenticeship.
- Modern social service provided at business terms such as up-to-date private health service and education, both provided both at institutional and small private scale.

So far we have not identified any presentation of private expenditure. But a World Bank document presented a framework for public expenditure reviews (World Bank, 1996), which included a discussion on the need for a private and public mix. However, the document did not discuss how to obtain this information. Usually there will be two sources for this information, both from a consumption perspective (i.e. in a Household budget survey/ Consumption and expenditure survey) and from the production side (i.e. in a National account perspective). We have to approach the data needs at a national level. We do expect that information could be collected for each of the social sectors. It is not possible to tell how far we can go. Ideally we would like to continue splitting information on one sub sector, for example in primary education on salaries, maintenance and educational material. A further search into data availability at the national level is needed to decide whether this is feasible or not.

Neither the documents on public expenditure review nor the disaggregated statistical information from IMF (1988) disaggregate expenditures on secure water supply and sanitation. Further work is needed here to identify internationally acknowledged subcategories.

To calculate shares, we would need to identify private resource allocation within all sectors. This is a huge task involving a number of critical decisions on how to identify private resource allocation for public goods and services. Hence our option would either be to calculate, for example public and private allocation for health as shares of total public resource allocation. This would obviously add up to more that 100 percent and thus whether or not to present this information requires further discussions.

**3.2. Indicators for sector and internal sector resource-allocation**

| Measure/Indicator, Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Percentage of public expenditures on social services | UNDAF/CCA | A,a |
| Health sector public expenditure | IMF | A,a |
| Health sector share of public expenditure | IMF | A,a |
| Health sector public & private expenditure | IMF | A,a |
| Health sector public & private share of public expenditure | IMF | A,a |
| Intra health sector public expenditure: Hospitals; Clinics and Practitioners; Medicaments, prostheses, etc.; and Other | IMF | F, A |
| Health sector share of public expenditure: Hospitals; Clinics and Practitioners; Medicaments, prostheses, etc.; and Other | IMF | F, A |
| Health sector public & private expenditure: Hospitals; Clinics and Practitioners; Medicaments, prostheses, etc.; and Other | IMF | F, A |
| Health sector public & private share of public expenditure: Hospitals; Clinics and Practitioners; Medicaments, prostheses, etc.; and Other | IMF | F, A |
| Education sector public expenditure | IMF | A,a |
| As above, as % of GNP | UNESCO: World Education Indicators (WEI) | A,a |
| Education sector share of public expenditure | IMF, UNESCO: WEI | A,a |
| Education sector public & private expenditure | IMF | A,a |
| Education sector public & private share of public expenditure | IMF | A,a |
| Intra education sector public expenditure: Primary, Secondary and Tertiary education | IMF | F, A |
| Education sector share of public expenditure: Primary, Secondary and Tertiary education | IMF, UNESCO: WEI | F, A |
| Education sector public & private expenditure: Primary, Secondary and Tertiary education | IMF | F, A |
| Education sector public & private share of public expenditure: Primary, Secondary and Tertiary education | IMF | F, A |
| Pupil - Teacher Ratio: Average number of pupils (students) per teacher | UNESCO: WEI | A,a |
| Secure water supply and sanitation sector public expenditure | IMF | A,a |
| Secure water supply and sanitation sector share of public expenditure | IMF | A,a |
| Secure water supply and sanitation sector public & private expenditure | IMF | A,a |
| Secure water supply and sanitation sector public & private share of public expenditure | IMF | A,a |
| Agricultural extension service; Public and private costs. | | N-F, x |
| Agricultural public marketing support (inputs and produce); Public costs. | | N-F, x |
| Rural feeder roads; Public and private investment costs | | N-F, x |
| Agricultural irrigation schemes; Public and private investment costs | | N-F, x |
| Public or private work programs; public work schemes, cash for work, food for work and subsidised or fully funded community development programs and NGO activities. Public and private costs. | | N-F, x |
| Informal sector extension service; entrepreneur advisory services, credit schemes, NGO schemes. Public and private costs. | | N-F, x |
| Training; adult-learning programs (excluding literacy training), artisanal training programs, formal vocational training. Public and private costs. | | N-F, x |

### 3.3. Sector monitoring chains

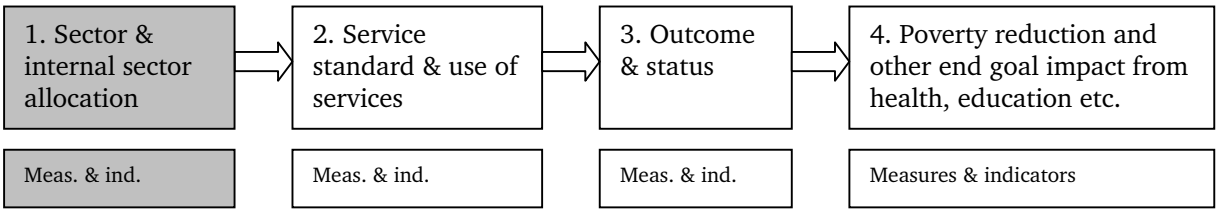
In the following paragraphs, the input – output – outcome is tracked sector by sector for the following sectors:

- Health:
  - o health sector resource allocation
  - o health service standard, access to health service, and use of health services
  - o health outcome and status
- Education
  - o education sector resource allocation
  - o education service standard and use of education services
  - o education outcome and status
- Water and sanitation
  - o water and sanitation sector resource allocation
  - o water and sanitation service standard
  - o water and sanitation outcome and status
- Smallholder agriculture
  - o smallholder agriculture sector resource allocation and agro-economic conditions
  - o smallholder agriculture service standard and infrastructure
  - o smallholder agriculture outcome and status
- Informal sector and employment
  - o informal sector and employment sector resource allocation
  - o informal sector and employment service standard and use of service
  - o informal sector and employment outcome and status

In countries implementing targeted poverty reduction activities, it should be considered whether these could be tracked within their sectors or require special tracking. Poverty reduction policies and activities should be monitored within their sector, since the outcome and often even the outputs are the impact of both general and specific resource allocation and policy. Only dedicated poverty reduction policies targeted towards clearly specified socio-economic or geographical groups might be suited for impact tracking. These policies require well-designed monitoring efforts in order to identify the possible impact of general versus specific resource allocation and policies.

- Targeted poverty reduction policy and actions
  - o resource allocation for targeted poverty reduction
  - o poverty reduction policy and poverty reduction activities
  - o targeted poverty reduction policy outcome and status

**3.3. Monitoring chain - Health sector resource allocation**



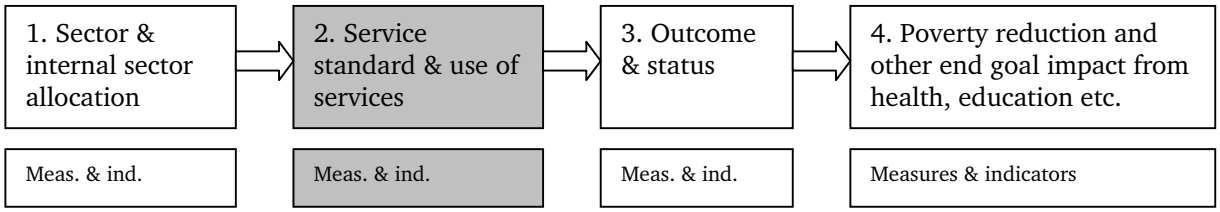

### 3.4. Health sector resource allocation

Resource allocation whether between or within sectors are presented jointly, refer to paragraph 2.12. However, when presenting the statistical link between resource allocation and service offered, the focus is by sector, refer to paragraph 3.21.

- In principle, resource allocation within the health sector will follow the general approach as presented above. However some issues require general awareness and need to be highlighted for the health sector. Among these are:
- the relative role of private and NGO service provision;
- the relative importance of private financing;
- the degree to which decentralisation implies responsibility for financing of services at sub-national level (e.g. block grant); and
- whether or not salaries are included and posts actually filled

Normally official figures for allocations to essential services such as primary health care (PHC) do not include private sector financing and provision, NGO financing and provision, nor private out-of-pocket payments, which may be of substantial amounts. Another important factor rarely included in official figures are donor funds that are not channelled through the normal system. These are funds that go directly to projects/programs or other types of financial/in-kind support to sub-national level and below. In decentralised systems where allocations are done at sub-national level (i.e. provincial or district level), it is often difficult to calculate overall funds nationally allocated to essential services. Statistics on salary levels might not be available according to service level, and require special concern.

**3.4. Monitoring chain - Health service standard and use of services**




## 3.5. Health Service Standard, Access to Health Service and Actual Use of Health Service

The actual use of health service is affected on one hand by the need for health service and on the other hand, by the health service being available, i.e. the access to the health service and the standard offered.

To follow the theoretical approach presented in this report we should present statistics of a) peoples' need for health service, b) standards offered and access (distance and fees/ payment) and c) the actual use of health service.

With some important exceptions such as the need for prenatal, birth, and postnatal care and vaccines for children, there is no common measurement of the need for health service. The large integrated household surveys promoted by the World Bank from around 1990, i.e. the Living Standard Measurement Survey and the Integrated Survey do include information on incidence of injuries and diseases. Hence such information is available in some countries and we may indeed use this as an indicator of the need for health service. Unfortunately there are quite some measurement problems. For example, the surveys asked whether people could not attend to their daily work or tasks due to disease and injury. Poor people who know they cannot afford treatment, a consultation nor to rest from their daily work tend to say that a disease will not stop them from working, while better off people can afford to stop working a day even for a minor disease.

Our judgment is that acceptable information on the general need for health service is not available and therefore we approach health service standard/access and actual use jointly.

Hence our approach is rather that health service standard, access and use are interlinked and dependent on each other, and are often measured using more or less the same indicators. An example is vaccination coverage, which partly shows the standard of the system providing the services, partly the access to the services and partly the actual use of the services. The indicators in this category are thus quite varied, but we included what we considered needed to have a broad overview of these factors. Here, as with most indicators, any disaggregated data (geographical or by social groups) are of great interest.

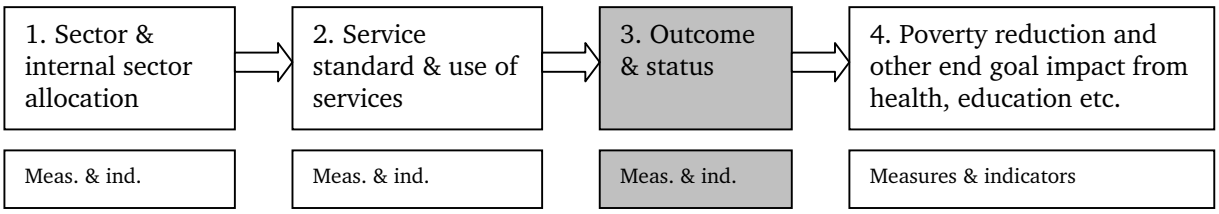
Two of the indicators, *Births Attended by Skilled Health Personnel* and *Contraceptive Prevalence Rate* are indicators included in the international development targets and PARIS21, and would thus probably be of special interest and quality. *Vaccination coverage*, (DPT3, measles and TB), is widely acknowledged as good indicators of a well functioning health care system. We suggest to operationalise the indicator 'vaccination coverage' as the percentage having undergone vaccination against all the diseases mentioned above.

It could be argued that *doctors and nurses per population and health unit data* should be defined as indicators of overall or internal sector allocations. However, here these are associated with service standard and accessibility.

**3.5. Indicators for health service standard and use of services**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| IDG - 13/ MDG - 17. Births Attended by Skilled Health personnel | PARIS21, UNFPA | A,a |
| IDG - 14/ MDG - 19. Contraceptive Prevalence Rate (per 1,000) | PARIS21, UNDP/UNFPA | F, x |
| MDG - 22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures | MDG/ UNDP | N |
| MDG - 24. Proportion of tuberculosis cases detected and cured under directly observed treatment short course | MDG/ UNDP | N |
| Vaccination coverage:<br>DPT3<br>MDG - 15. Measles<br>TB | WHO: World Health Report 1999. MDG/ UNDP. UNDP: HDR 1999 World Bank: World Dev. Indic. 1999 | A,a |
| Antenatal care use | | A,a |
| Post natal care use | | A,a |
| MCH (Mother and child health care) utilisation | | A,a |
| Doctors per 100,000 population | UNDP | F, x |
| Nurses per 100,000 population | UNDP | F, x |
| Health units per 1,000 population | WB/WHO | F, x |
| Beds per 1000 population | WB/WHO | F, x |
| Access to PHC (% within 5/10/15 km) | | A, x |
| Consultations per staff | | F, x |
| No. of drugs per prescription | | F, x |

**3.6. Monitoring Chain - Health outcome and status**




## 3.6. Health Outcome and Status

As for most sectors and projects/programs, indicators on outcome are relatively clear and easy to obtain. However, it is important to remember that this outcome may be reached due to improvements in other sectors and not necessarily caused by changes within the health sector. Good examples of this dilemma may be the different mortality and morbidity measures where improvement or deterioration actually may reflect interventions in other sectors, and/or even changes in environmental factors, e.g. drought, improved roads, or nutrition. It is however important to stress that keeping all things constant, we would expect outcome in health status to be affected by interventions and improvement in health service. Hence it is important to study statistics over some time and across different strata and contexts.

It is important to remember that health sector service include a range of preventive and curative health service activities. For preventive health service, the outcome will usually be coverage of diseases and mortality for various groups. For curative health service, the direct positive outcome is that the client has gotten rid of the actual disease. For more complex and vulnerable processes such as childbirth and the first year(s) of living, it might be hard to separate the outcome of preventive and curative health and the outcome is rather an outcome of the mother and child health system and the overall health system. Hence the outcome indicators are quite broad and include even

mortality indicators. It is however important to realise that these are sub-group mortality indicators, while indicators of overall mortality are end goal indicators.

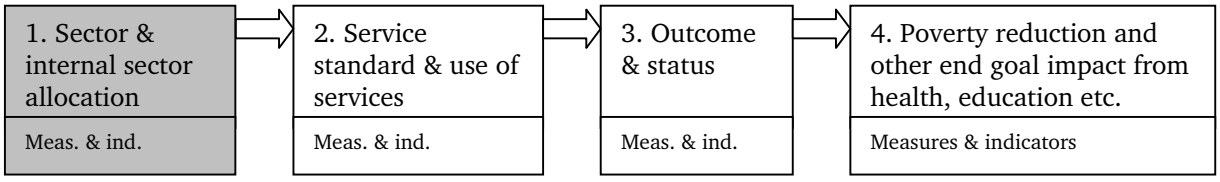
A number of the international development targets indicators have been included in the list recommended here, with the benefits these may carry (see 3.7 below). These include also broad indicators which have some impact from health sector interventions, but probably just as much or even more so from other factors and interventions in other sectors. Nevertheless, as internationally acknowledged and recommended measures, these are included, but they need to be seen in light of other measures (such as *Incidence of diarrhoea diseases among under five year olds*).

It could also well be argued that some of the indicators of standard, access and use could be included in this step, depending on perspective of the outcome. One could argue that 97% coverage of vaccine against measles is an outcome, but it is also an indication of service availability, standard and use. In either case, it assumes that the vaccine is effective and actually does prevent against the disease, with the effect (outcome or impact) that measles is reduced.

**3.7. Indicators for health outcome and status**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| IDG - 10/ MDG - 14. Infant Mortality Rate | PARIS21, UNDP | A,a |
| IDG - 11/ MDG - 13. Under 5 Mortality Rate | PARIS21, UNDP | A,a |
| IDG - 12/ MDG - 16. Maternal mortality ratio | PARIS21, WHO | A,a |
| IDG - 15/ MDG - 18. HIV Prevalence in 15 to 24 Year-Old Pregnant Women | PARIS21, UNAIDS | F, x |
| IDG/MDG - 4. Child Malnutrition: Prevalence of Underweight Under 5s | PARIS21/WHO | A,a |
| MDG - 21. Prevalence and death rates associated with malaria | MDG/ UNDP | F,a - N |
| MDG - 23. Prevalence and death rates associated with tuberculosis | MDG/ UNDP | F,a - N |
| Diarrhoea disease incidence of under 5s | | F,a - N |
| Total fertility rate | UNDP | A,a |
| Population growth rate | UNDP | A,a |
| STD prevalence (per 100,000) | WHO | F, x |
| TB prevalence (per 100,000) | WHO | A,a |

**3.8. Monitoring chain - Education sector resource allocation**




## 3.7. Education Sector Resource Allocation

Resource allocation whether between or within sectors are presented jointly. However, when presenting the statistical link between resource allocation and service offered, the focus is by sector. For presentation of resource allocation please refer to paragraph 3.2.

The global educational institutions focus on specific measures and indicators of educational sector resource allocation. The UNESCO initiative Education For All (EFA) focuses on primary education and highlight 2 indicators on resource allocation as follows:

- Public current expenditure on primary education a) as a percentage of GNP; and b) per pupil, as a percentage of GNP per capita.
- Public expenditure on primary education as a percentage of total public expenditure on education.

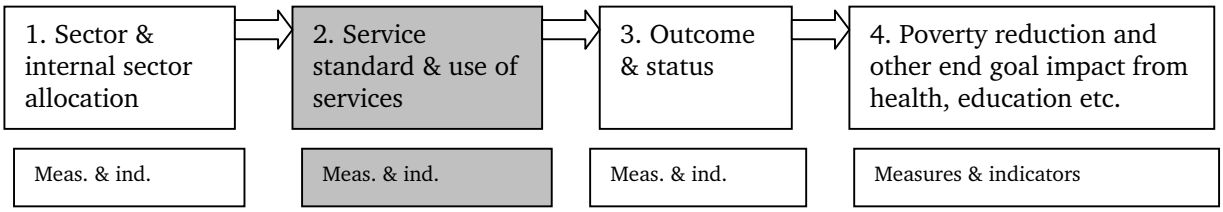
UNESCO recommends disaggregated information as follows:

- Public current expenditure per pupil (student) as percentage of GNP per capita.
- Teachers' salaries and benefits as percentage of public current expenditure on education.

- Public expenditure on education as percentage of total government expenditure.
- Percentage distribution of public current expenditure by level of education.
- Educational expenditure as a percentage of GDP for all levels of education combined, by source of funds.
- Public educational expenditure as a percentage of total public expenditure.
- Direct expenditure for institutions and transfers to the private sector as a percentage of total government expenditure combined with tertiary level of education.
- Distribution of public and private sources of initial funds for educational institutions.
- Percentage of all public expenditure for educational institutions for public institutions, government dependent private institutions, and independent private institutions.
- Expenditure on educational services per student in public and private institutions by level of education in PPP converted in US$.
- Educational expenditure by level of education, resource category for public and private institutions.

We find it difficult to recommend these indicators because these are specific indicators even if the focus is on the overall education sector. We would rather recommend presenting more statistics on resource allocation at a more general level with a special emphasis on primary education.

**3.9. Monitoring chain - Education service standard and use of services**




## 3.8. Education Service Standard, Access to Education Service and Use of Education Service

The actual use of education service is affected on one hand by the need for education service and on the other hand by the education service being available, i.e. the access to schools and training and the standard offered, similar to the health sector.

Setting education apart from health, the need for basic education is easily identified. Children at school age need primary education and illiterate adults need literacy training. Students passing the final class exams from primary and secondary schools are eligible for secondary school/ tertiary education.

This makes the statistical challenge not easier, but more straightforward. It is possible to measure educational service standards and access and when the need is well known, to follow how standard/ access and needs are related to the *de facto* use of educational services. In fact, for primary school there are few reasons to believe that the use of schools will affect the service standard (number of schools etc.), hence it is reasonable to interpret statistics over time as indicators on how standard/access and need (basic need and perceived need) do affect the use of educational service such as school attendance.

Hence the task is to present statistics for the availability and use of education service, given the basic need for schooling in a given social group, geographical area, gender- or age-group. It will then be possible to present statistics on how resource-allocation and service level are related to outcome.

### 3.8.1. Education Service Standard

Educational standard, quality and efficiency has several dimensions and they are as follows:

- Physical infrastructure and equipment: Number and geographical distribution of schools, number of classrooms, standard of buildings, furniture, facilities, textbooks
- Organisational: Number of shifts, class divisions, class size and combining two or more grades in one class.
- Human resources: Teachers' qualifications, teachers' salary systems, pupil-teacher ratio

Regular indicators on physical aspects and equipments are usually limited to the number of schools and classrooms. This does not imply that such data neither is available nor is it relevant and important. In many countries such information is included in *ad hoc* household or community surveys. However, there is still lack of standardisation, whether reflecting cultural differences in the evaluation of standards or lack of acknowledgement of the need. While low standards are accepted along some dimensions, other dimensions

such as lack of proper separation between latrines for girls and boys are mentioned as reasons for drop out of girls from school.

Also for organisational issues, there is lack of regular statistics. Research shows however, that if children are taught in shifts, school attendance is low and there is a need for regular statistics to be collected.

Information on human resources will however usually be collected and presented but limited to teachers' qualifications, teacher/pupil ratio and number or ratio of female teachers.

### 3.8.2. Access to Education Service

As indicator of access to educational services, we recommend proportion of population within a given distance or the type of service in question. Transport to school is in most cases a matter of walking and hence for comparison, distance should be measured in terms of length, say 5, 10 or 15 kilometres, and not in (travel) time. Such data are not available in international education statistics tables, but collected frequently in *ad hoc* surveys, thus we recommend this indicator to be included at this stage.

Another access indicator is the payment of school fees. For poor families the level may be prohibitive. We have not found data on school fees regularly reported. But we recommend that data on school fees, the distance indicator, availability and standardisation should be checked in pilot countries.

### 3.8.3. Use of Education Service

A variety of indicators on use of education services are found on the list seen in 3.10, the most frequent of which is enrolment ratios. These measures express the percentage of a group enrolled as pupil or student. A main distinction is found between Gross and Net enrolment ratios. Gross ratios (GER) count pupils regardless of age in the numerator, while the denominator is the eligible official school-age population. GER therefore may exceed 100 per cent, and such values relatively often occur in international statistical tables. Net enrolment ratios (NER) express the percentage of a given group that are actually enrolled, and thus have an upper bound at 100 per cent. Both types of ratios may be refined by further specification of the group like primary education, secondary education, or by one-year cohorts. When referring to the cohort at official entrance-age, the term intake rate is used.

Our view is that net enrolment rates are to be preferred, as their variation range is fixed. To calculate net rates, more specific data are needed however, and interpretation of a rate and its complementary value is dependent upon the presence of over- and/or under-aged enrolment. For education at tertiary level one obvious problem is the determination of what is an appropriate school age.

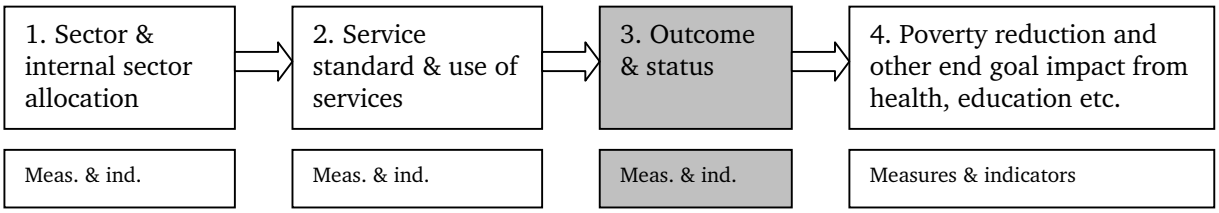
The PARIS21 list of core indicators uses net enrolment (NER) in primary level. This seems reasonable, as the long-term goal is universal primary education. It further includes 'Ratio of Girls to Boys in Primary and Secondary Education' as one of two indicators on gender equality.

We are in favour of using NER for primary and secondary level. For the tertiary level, UNESCO suggests to use the number of students in tertiary education per 100 000 inhabitants as an indicator. Thus the problem of defining the official age is omitted, but this indicator is of course dependent upon the age-structure in the population.

**3.10. Indicators for education service standard and use of services**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Education Service Standard | | |
| Number of children at primary school age by no of classrooms | | X |
| Number of primary school children by no of classrooms | | X |
| Percentage of primary school teachers having the required academic qualifications | EFA | F,x |
| Percentage of primary school teachers who are certified to teach according to national standards | EFA | F,x |
| Pupil-teacher ratio | EFA, UNESCO, OECD, WDI | A, x |
| Share of female teachers | UNESCO, WDI | F, x |
| Share of teachers in private schools | UNESCO | x |
| Teachers' annual gross salaries in PPP$ | UNESCO/OECD | N |
| Access to Education Service | | |
| Share of children at primary school age within 5, 10 and above 10 km | | N |
| Share of primary school children paying total fees above such as US$ 0.01 per day (using both national & international limits). | | N |
| Use of Education Service | | |
| IDG - 5/MDG - 6. Net Enrolment Ratio, Primary Education | PARIS21,EFA, UNDAF-CCA, UNESCO, WDI | F, x |
| Gross Enrolment Ratio, Primary Education | EFA, UNESCO, WDI | A,a |
| Apparent Intake Rate | EFA, UNESCO | A-F, x |
| Net Intake Rate | EFA, UNESCO | F, x |
| IDG - 8/ MDG - 9. Ratio of Girls to Boys in each of Primary, Secondary and Tertiary Education | PARIS21, UNESCO | A, x |
| Transition from primary to secondary education | UNESCO | F, x |
| Age-specific enrolment ratios | UNESCO | A-F, x |
| Numbers of students in tertiary education per 100000 inhabitants | UNESCO | A,a-x |
| Percentage of repeaters | UNESCO,OECD, WDI | A, x |

**3.11. Monitoring chain - Education outcome and status**




## 3.9. Education Outcome and Status

A very essential aspect when it comes to educational outcome on the individual level is whether a person is able to read and write. To measure this precisely is quite a task, but obviously there is a strong correlation between the number of years in school and the probability of obtaining this skill. After four years, people with normal intellectual capacity learn how to

read and write. So to measure how many pupils reach this stage reveals the educational system's performance. Various versions of the indicator exist. PARIS21 recommends 'completion of 4th grade of primary education'. Among the 18 core indicators selected for Education for All 2000 Assessment is 'survival rate to grade 5 (percentage of a pupil cohort actually reaching grade 5) (UNESCO,1998b). Still another version is average numbers of years of schooling completed; this one is included in UNSD's Minimum National Social Data Set. We will follow PARIS21 in this respect. We also find the number of pupils actually running through the education system as an important aspect. Hence completion of education by level is included in the indicator set. Indicators that count duration without taking into account what has been learned could be viewed as indicators on participation and access, as is the case for UNESCO.

Literacy is included in every indicator list, and unanimously as an outcome indicator. UNESCO defines a person as literate if he or she can read and write with understanding a short simple statement on his/her everyday life (UNESCO 1998a). Indicators differ with respect to the group that should be considered. Roughly spoken there are two options: Either all adults (population 15 years and above), or young adults, with an upper age limit of 24 years. In principle, literacy should be universal, but in the real world with limited resources, we feel that priority should be given to the younger group.

In addition to monitoring overall literacy development, one wants to monitor gender disparity, thus females' literacy as compared to males' is included, following PARIS21 and EFA.

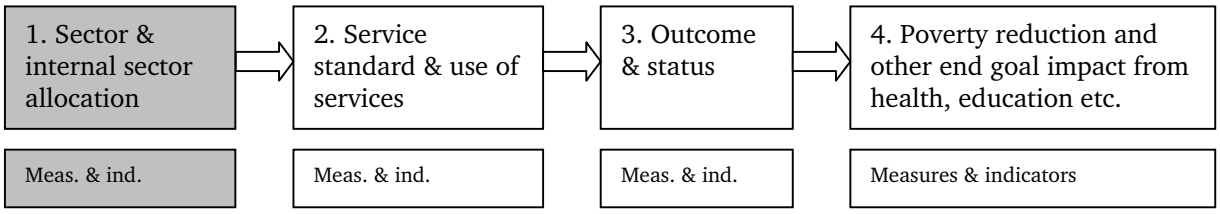
Finally, we included the dropout rate on the indicator list. The frequency of dropouts indicates the education system's ability to 'process' those who actually enter the system. Dropouts are counted as all discontinuations whether between or within grades, with the exception of deaths and serious illness. Dropout rates are different from enrolment rates, as the numerators in the former are those enrolled, and not the whole population cohort(s).

Figures on dropouts are not reported explicitly in international statistics. However, dropout counts or estimates are, needed for the calculation of coefficients of efficiency. UNESCO presents this indicator for many countries, mostly on an annual basis. It is usually derived using cohort analysis models that are based on a number of assumptions. The availability of regular data from registers or surveys is thus questionable.

**3.12. Indicators for education outcome and status**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| IDG - 6/ MDG - 7. Completion of 4th Grade of Primary Education | PARIS21, EFA, UNESCO, WDI | A, x |
| Percentage of cohort reaching grade 5 | World Bank, UNESCO | A, x |
| Completion of Primary Education | UNESCO | A-F, x |
| Completion of Secondary Education | | F,x |
| Completion of Tertiary Education | | F,x |
| IDG - 7/ MDG - 8. Literacy rate of 15 to 24 Year-olds | PARIS21, EFA, WEI, UNDAF-CCA, WDI | A,a |
| IDG - 9/ MDG - 10. Ratio of Literate Females to Males (15 to 24 Year-Olds) | PARIS21, EFA, WDI | A,a |
| IDG - Adult literacy rate | PARIS21, WDI, HDR | A,a |
| Drop-out rate, primary education | UNESCO | A-F, x |

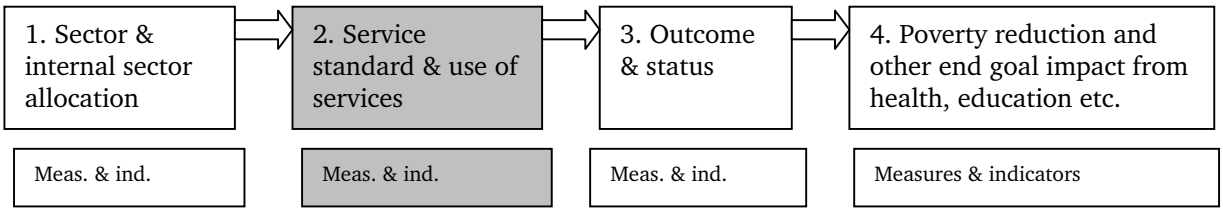
**3.13. Monitoring chain - Water and sanitation sector resource allocation**



### 3.10. Water and Sanitation Sector Resource Allocation

As in the other sectors, resource allocation whether between or within sectors are presented jointly. However, when presenting the statistical link between resource allocation and service offered, the focus is sector by sector. For presentation of resource allocation please refer to paragraph 3.21.

**3.14. Monitoring chain - Water and sanitation service standard**




### 3.11. Water and Sanitation Service Standard

Over the last decades, governments and donors alike have been concerned about adequate supply of clean and safe water. A proper user orientation provision of basic standard in both urban and rural areas has improved, but still large shares of the population lack access to clean water either throughout the year, or more widespread to clean water even in the rainy season.

Unfortunately few countries have proper administrative statistics on access to clean water. But fortunately, standard population censuses, health surveys and even general household surveys usually collect information on the main water source of the household and hence allowing regular, but quite often up-to-date data on access to clean or safe water.

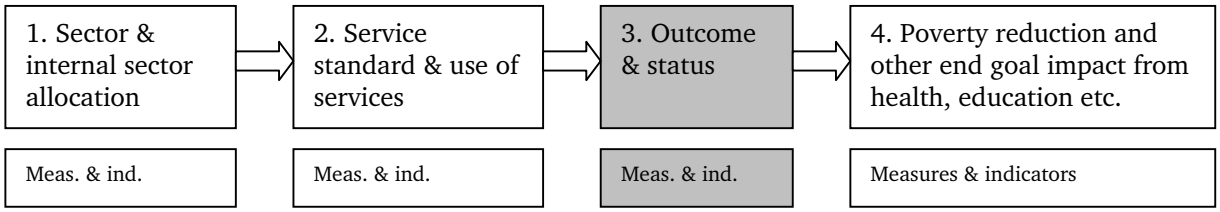
We would also argue that information is needed for distance to water sources in and for sanitation services being used. Quite a number of censuses and surveys might even collect information on type of sanitation use and service and about the distance to water source in rural areas. This information is however more scarce and we only recommend to consider include this information at the national level.

One of the Millennium Targets is to improve the lives of slum dwellers and they have launched two indicators, one referring to sanitation and one to secure tenure. Both this sanitation indicator and the water source indicator refer to "improved" sanitation and an "improved" water source. Conceptually that might be different from "safe" sanitation and "safe" water, but there is a consistent tradition and hence an unprotected well is considered neither safe nor improved.

**3.15. Indicators for water and sanitation service standard**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| IDG - 17/ MDG - 29. Population with access to an improved water source. (throughout year, in dry season only, no access) | PARIS21<br>UNFPA: State of the World's Population 1999<br>World Bank: World Dev. Indic. 1999<br>UNICEF: State of the World's Children 2000 | A, x |
| To be considered at national level: Distance to water source; =< 500m, =< 1 km, =< 3 km, > 3 km | | N,x |
| MDG -– 30. Population with access to improved sanitation | UNDP, MDG | F,x |
| To be considered at national level: Sanitation system and service | World Bank: World Dev. Indic. 1999<br>UNICEF: State of the World's Children 2000 | |

**3.16. Monitoring chain - Water and sanitation outcome and status**




## 3.12. Water and Sanitation Outcome and Status of Waterborne Disease Prevalence

Access to clean water is an element of access to safe and sufficient food and drinks. The aim is both to increase the access and ensure sufficient access. Following the general logic of this document, access to clean water is a matter of service standard. The outcome would be to ensure that all people always drink clean and safe water. This in not only a matter of having access to clean water, but also to ensure proper storage and use of the water. However, adequate statistical information on proper water storage, water use and sanitation behaviour is only available on *ad hoc* basis.

Hence our recommendation is to focus on one potential impact of the lack of clean water consumption, i.e. waterborne diseases. Waterborne diseases in this perspective would include a broad range, from tooth, health and eye diseases to dysentery or any type of diarrhoea. For general monitoring, there is no need to identify the incidence of specific waterborne diseases, but rather to monitor the incidence of any type of diarrhoea. Such information might be available from *ad hoc* surveys and for children below 5 attending postnatal care. Then we are also able to avoid the problem of lack of information on incidence of specific diseases with similar symptoms, and the lack of systematic information on eye disease and tooth health. It should be stressed that diarrhoea might be caused by several factors, but the incidence will still be an indicator of consumption of clean or infected water.

**3.17. Indicators for water and sanitation outcome and status**

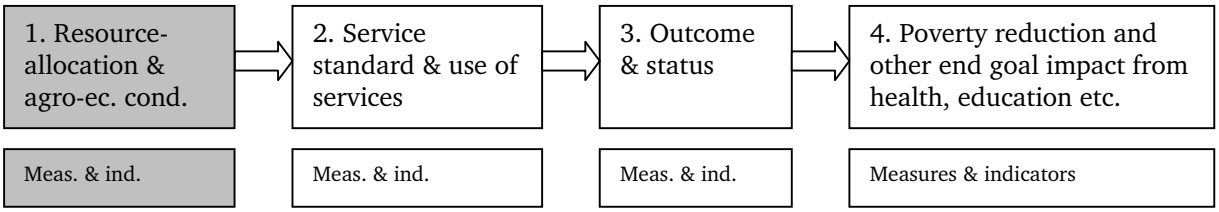
| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Incidence of diarrhoea | | A, x |
| Incidence of diarrhoea among children <5 attending postnatal care. | UNICEF | A-F, A |

## 3.13. Smallholder Agriculture Sector Resource Allocation and Agro-Economic Conditions

The aim would be to measure resource allocation for services and activities measured under output. But usually whether the statistical source is government finance statistics or government accounts for recurrent and investment costs, the functional disaggregation only allows for broader measures and indicators, such as overall extension by province and overall research at national level. It might be possible to identify investment costs for irrigation schemes but only at national level. Costs for feeder roads might or might be difficult to identify. Support for local organisation might be direct, but more often indirect as payment for transport to public storage and marketing depots and hence difficult to measure.

Hence, our recommendation should be seen more as an example to be adapted than for the social sectors. Our main recommendation is to monitor resource allocation at the presented level of disaggregation and if the data does not allow this level, to present data at the lowest level possible. We also strongly recommend to monitor and present data for a geographical disaggregation such as provinces.

**3.18. Monitoring chain - Smallholder agriculture sector resource allocation and agro-economic conditions**




**3.19. Indicators for smallholder agriculture sector resource allocation & agro-economic conditions**

| Measure/Indicator - Name/ Description | Recommended / used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Rainfall. To be measured during critical period such 5-8 weeks from first rain. To be presented as percent of minimum requirements at district level | | F, a |
| Access to land. To be measured as share of agricultural holder families cultivating enough land to feed family if average yield. | | F, x |
| Access to markets. To be measured as share of agricultural holder families within 50 km from a large urban market and share within 50 km from town or district centre. | | F,x |

It is recommended to present resource allocation whether between or within sectors jointly as in the other sectors. However, when presenting the statistical link between resource allocation and service offered, the focus should be sector by sector. For presentation of resource allocation please refer to paragraph 3.21.

As discussed in the previous chapter the focus for agro-economic conditions should be upon relative conditions, either conditions changing over time or across geographical areas.

A reasonable approach would be to address each of the production factors, as follows:

- Land and climatic conditions:
  - Soil quality.
  - Rainfall. Should address critical rainfall, such as second moths of maize season.
- Access to land: Should address important issues like lack of land and small scale farmers share of produce which is not enough to provide minimum calories
- Access to markets: Should address distance to large urban markets and possibly to any district centre or town[12].

## 3.14. Smallholder Agriculture Service Standard and Infrastructure

While agriculture production is a typical private sector income generating activity based upon natural resources, it is dependent on a number of infrastructures i.e. physical or, institutional.

In most developing countries, the standard situation for some decades have been a public or parastatal extension service and marketing system for selected crops, usually main export crops or main domestic staple crops. In many countries, a main focus during the last 10 years has been on dismantling or reducing the public or parastatal marketing system and even the extension system. In some countries, support has been given to the private sector to fill the gap and to establish systems of private marketing and extension services, while in others it is assumed that the private sector will fill the gap guided by the market forces without any support. The public control of the new situation has in general been very passive.

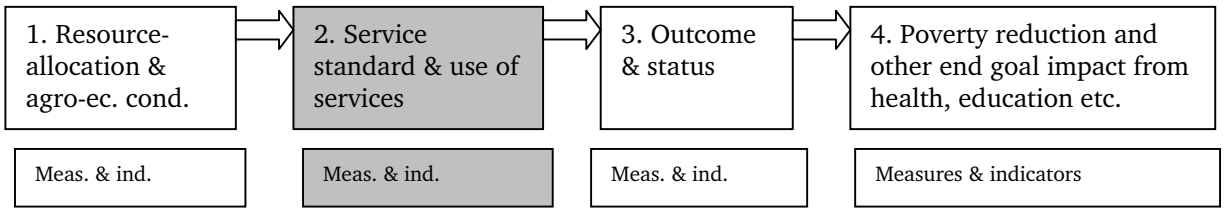
In this situation, the need for proper monitoring is large and urgent. We recommend addressing extension service, support to input supply and marketing, but giving priority to price monitoring, including monitoring distribution of price information. Theoretically under a free market situation, inputs will always be available and it will always be possible to sell your produce, but the issue is price. However, above a certain price for inputs, farmers would rather rely upon seeds they have retained from previous harvests and will not risk buying fertilisers seen in 3.1. (For sale of agricultural products, the issue is rather a monopsony problem. By controlling access to credit, forming informal cartels and other means, traders are often able to agree upon how to share areas allowing co-traders to ensure large trade margins and operate

[12] Centrality as defined as distance to larger markets, were shown to have an impact in Wold (1997).

on a monopoly bases at farm gate- and sub-district level. Remote areas where these trade- or profit margins cannot be sustained end up not being served at all. This is of course a real disincentive for farmers to risk producing for sale, therefore causing a bad circle, i.e. no market, no production, no market. Hence the first level in a monitoring system is the existence of any market at all.

In addition, there is a need to monitor local access to different types of infrastructure, including research on different types of crops (e.g. cash crops, food crops, smallholder targeted research, low-risk and low-input or drought resistant), feeder roads, irrigation systems (e.g. traditional and modern), and access to cooperative organisations.

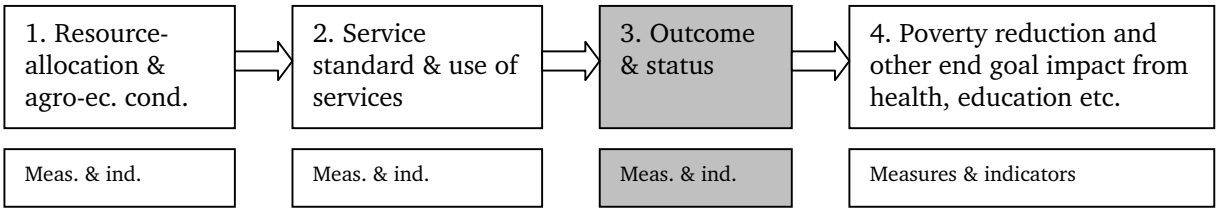
**3.20. Monitoring Chain - Smallholder agriculture service standard and infrastructure**




**3.21. Indicators for smallholder agriculture service standard and infrastructure**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Extension service:<br>- village been visited by extension officer/ worker<br>- farmer been visited by extension officer/ worker<br>- farmer received extension advice (directly from extension officer or indirectly through other farmers) | | F, x |
| Access to inputs (seeds and fertilizer): seeds for one major crops and at least one type of fertilizer sold<br>- at village level<br>- at sub-district level<br>- at district level | | F, x |
| Access to crop markets (2-4 major crops). Regular markets at least every fortnight<br>- at village level<br>- at sub-district level<br>- at district level | | F, x |
| Research impact measured as no number of new improved or hybrid varieties of crops (and for reference total varieties) launched:<br>New varieties of low-input crops launched during last 3 years<br>New varieties of drought resistant crops launched during last 3 years<br>All new varieties of any crop launched during last 3 years | | F, x |
| Access to feeder roads in village | | F, x |
| Access to cooperative organization in village | | F, x |
| Share of farmers with any irrigation (traditional and modern systems) | | F, x |
| Input prices at village and district level at planting time<br>- major crop seeds<br>- fertiliser | | F, x |
| Major crop prices (2-4 crops) at farm gate and district level, at harvest and planting time, and in small and large quantities | | F, x |
| Consumer prices (2-4 crops) at village and district level at harvest and planting time | | A-F, 4-12 |
| Producer price as share of consumer price (2-4 crops) at harvest and planting time | | F, x |

**3.22. Monitoring chain - Smallholder agriculture outcome and status**




## 3.15. Smallholder Agriculture Outcome and Status

The outcome in the agricultural sector is crop and livestock production for own consumption and sale. In order to follow the impact from inputs and outputs, some selected production lines should be monitored. With a focus on both production for both own consumption and marketing, the focus should be on staple food.

Hence it is recommended to monitor the production of basic staple crops. Due to variations in agro-climatic conditions and relative prices, it is recommended to include 3-4 basic staple crops.

When following the impact of inputs and outputs, the focus would be on production per adult, men and women per year, working with agricultural production and then to disaggregate this information for small-holders, medium scale farmers, and commercial farm workers.

Given data availability, it will however be necessary to choose an adapted indicator and we recommend this to be production per adult person with main occupation in the agricultural sector. In some countries it might even be possible to disaggregate production information, such as for commercial farms versus other production. We would then exclude persons working only part-time in agriculture as well as women reporting housework as main occupation. However, there is no reason to expect the share of production by these groups to change rapidly and hence we expect such an indicator to be robust.

When addressing the impact of production for economic welfare, poverty and hunger, the focus would be on production per family member of all households working in the agricultural sector and then disaggregate as above. Again given the data available, there is a need too for an adapted indicator. We recommend using production per family member in all households where at least one adult has his or her main occupation in agriculture. The argument presented above applies for this indicator as well and we expect it to be a robust indicator.

**3.23. Indicators for smallholder agriculture outcome and status**

| Measure/Indicator - Name/ Description | Recommended / used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Annual production *in value terms* for 2-4 main crops *per adult person*. If possible, to be disaggregated for medium scale farmers, smallholder and agricultural worker. To be calculated per person with main occupation in agriculture. | | A, 10 |
| Annual production *in volume terms* for 2-4 main crops *per adult person*. If possible, to be disaggregated for medium scale farmers, smallholder and agricultural worker. To be calculated per person with main occupation in agriculture. | | A, 10 |
| Annual production *in value terms* for 2-4 main crops *per family member*. If possible, to be disaggregated for medium scale farmers, smallholder and agricultural worker. To be calculated per person for all households with at least one adult with main occupation in agriculture. | | A, 10 |
| Annual production *in volume terms* for 2-4 main crops *per family member*. If possible, to be disaggregated for medium scale farmers, smallholder and agricultural worker. To be calculated per person for all households with at least one adult with main occupation in agriculture. | | A, 10 |

### 3.16. Informal Sector and Employment Sector Resource Allocation

Similar to the agricultural sector, the aim would be to measure resource allocation for services and activities measured under output. But usually government finance statistics or government accounts for recurrent and investment costs are hardly as disaggregated along the functional dimension as needed and often not according to outputs. The recommendation is then to present the best possible data even if only available in aggregates such as for overall costs of ministry of labour. In order to serve the interests of the users it is, however, important to break down the overall data either at a functional or a geographical dimension.

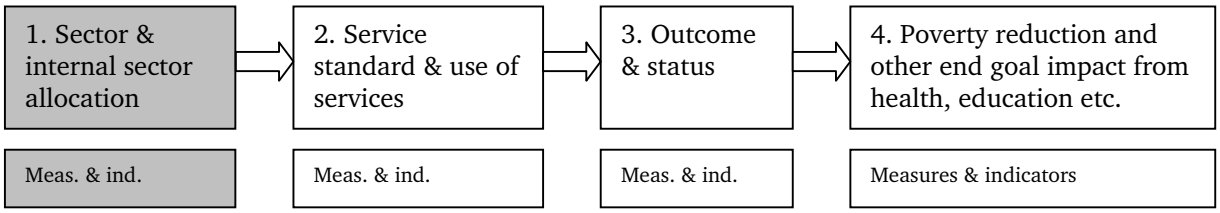
It is recommended to include resource allocation for the three dimensions already presented by province, as follows:

- Public or private work programs, such as public work schemes, cash for work, food for work and subsidised or fully funded community development programs and NGO activities.
- Direct support such as to extension or advise service, credit schemes, entrepreneur schemes, NGO schemes.
- Indirect support through support to education being either adult learning programs (excluding literacy training), artisanal training programs or more formal vocational training.

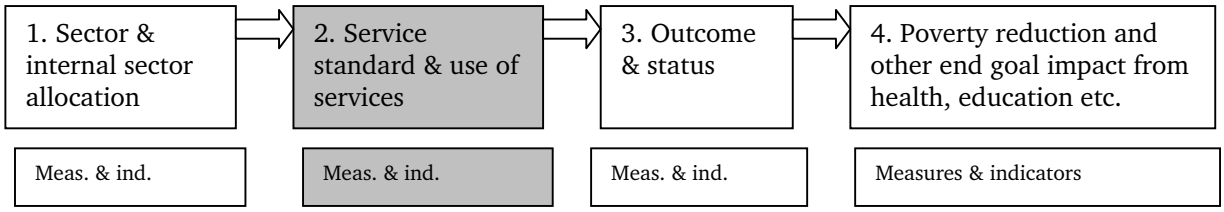
It is recommended to present data for one or more of the sub-dimensions if data are not available for a full dimension.

Resource allocation whether between or within sectors are presented jointly. However, when presenting the statistical link between resource allocation and service offered, the focus is by sector. For presentation of resource allocation please refer to paragraph 3.21.

**3.24. Monitoring chain - Informal sector and employment sector resource allocation**




**3.25. Monitoring chain - Informal sector and employment service standard and use of service**



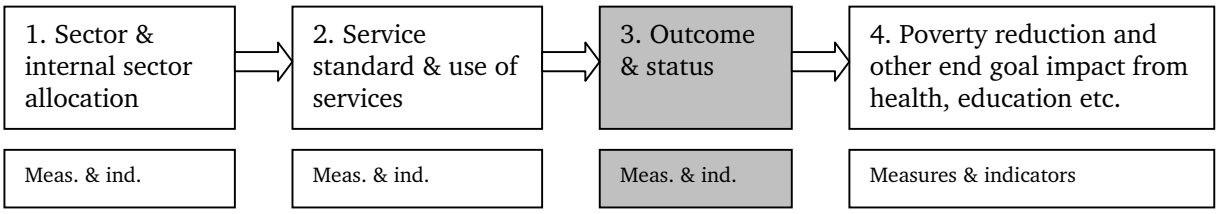

### 3.17. Informal Sector and Employment Service Standard and Use of Service

The aim would be to monitor both services offered and the use of those services. We are however recommending to focus on availability of services towards entrepreneurs and establishments and the actual use of programs targeted at individuals. We also recommend monitoring service targeted at assisting informal sector establishments to move to formal sector and the paperwork needed.

**3.26. Indicators for informal sector & employment service standard and use of services**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Urban population with access to and knowledge about public or NGO informal sector advisory service, credit schemes and/or entrepreneur schemes. | | F-N, x |
| Urban labour force in public work programs, food for work programs, cash for work programs, paid community development programs, paid NGO activities. | | F-N, x |
| Youth in artisanal training programs in urban areas | | F-N, x |
| Youth in vocational training in urban areas | | F-N, x |
| Informal sector establishments moving to formal sector | | N,x |
| Number of public institutions to visit to establish a one-person formal sector company. | | N, x |

**3.27. Monitoring chain - Informal sector and employment outcome and status**



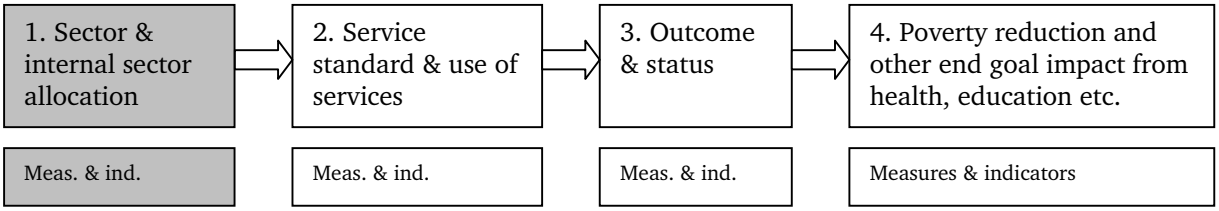

## 3.18, Informal Sector and Employment Outcome and Status

The planned outcome of all informal sector activities is more informal sector establishments, informal sector establishments growing into formal ones and higher employment for unskilled or low skilled persons in any of these sectors. Monitoring should focus on both informal sector establishments and a broader perspective upon employment.

**3.28. Indicators for informal sector and employment outcome and status**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Number of informal sector establishments. To be measured at national level and for large cities, disaggregated by size and sub-sector. | | F, x |
| Size of urban unskilled labour force as per cent of labour force | | F, x |
| Share of urban unskilled workers in informal sector | | F, x |
| Size of urban un- or low (< 12 m) skilled labour force as per cent of labour force | | N-F, x |
| Share of urban un- or low (< 12 m) skilled labour force in informal sector | | N-F, x |
| Share of informal sector establishments moving to formal sector. | | N-F, x |

**3.29. Monitoring chain - Poverty reduction policy and poverty reduction actions**



### 3.19. Resource Allocation for Targeted Poverty Reduction Policy

Rather than tracking the policy impact by sector as in this report, one might aim at tracking targeted poverty reduction activities across sectors as usually done in PRSP monitoring. As initially referred, the general PRSP approach is to split between input – output monitoring versus outcome – impact monitoring and evaluation. This PRSP monitoring approach focuses on two aspects. First, a focus on a management information system to follow resources earmarked or dedicated for poverty reduction activities from input of resources to output, such as whether resources for school feeding materialise across all districts. The second PRSP focus is on outcome – impact monitoring and evaluation. A link is missing between the two focuses; hence there is no monitoring of whether a school-feeding program really ensures that pupils complete primary school.

The approach presented here *does* monitor this link, but only jointly with all resources allocated to primary schools, the general output and the overall increase or decrease in primary school completion rates and literacy levels.

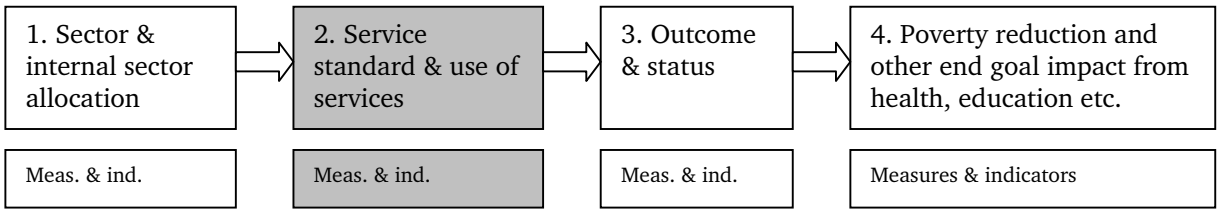
It is however possible to monitor targeted poverty reduction policies, programs and activities by sector. The challenges are two, as follows:

- It is essential to monitor whether resources for targeted poverty reduction are additional resources, a reallocation of resources from general programs to targeted programs or only relisting old activities under new headings. One would obviously design a monitoring system differently if resources for rural school feeding are fresh resources, resources for urban areas reallocated to poorer rural areas, or only an existing school feeding programs under a new label.
- It is essential with a comprehensive sector monitoring system, following resources for targeted poverty reduction as one sub-component of the overall sector resource allocation.

The answer to both challenges is a sector monitoring system following targeted sector resource allocation simultaneously with overall sector resource allocation.

Hence monitoring systems for targeted poverty reduction policy, program and activity resource allocation are to be designed at country level.

**3.30. Monitoring chain - Poverty reduction policy and poverty reduction actions**




### 3.20. Poverty Reduction Policy and Poverty Reduction Actions

Resources allocated for targeted poverty reduction policies; programs and activities might be categorised according to level i.e. national or local, and participation i.e. policy from above or some participation in identifying priorities, as follows:

- pro-poor policy and resource allocation;
- targeted poverty program towards certain geographical areas, socio-economic or other special groups; and
- poverty reducing actions such as social funds and community development activities.

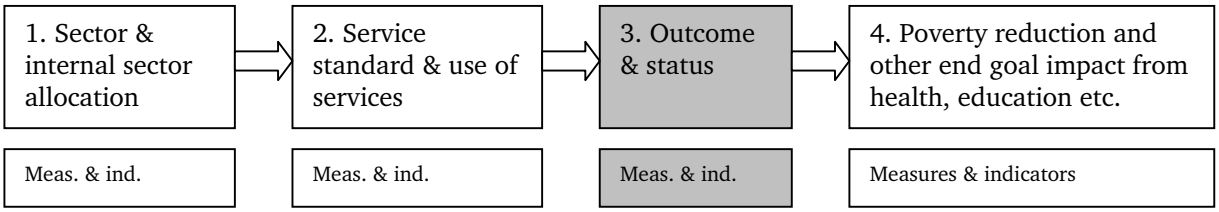
The so called Heavily Indebted Poor Countries, countries aiming at debt forgiveness or countries aspiring for IMF credit have all during the last few years prepared interim and then final Poverty Reduction Strategy Papers including poverty reduction level.

strategy with these elements. They are now in the process of preparing poverty monitoring systems or master plans.

A pro-poor policy and resource allocation would aim at certain outputs well designed for reaching the poor, and outputs and outcome would usually be captured by a standard sector monitoring aiming to track policy impact.

Targeted poverty programs or poverty reducing activities includes a range of intended outputs. Some might be captured by the general sector monitoring (broken down at geographical areas and to socio-economic groups) aiming to track policy impact as presented in this chapter while others require dedicated monitoring at country

**3.31. Monitoring chain - Targeted Poverty Reduction Policy Outcome and Status**




## 3.21. Targeted Poverty Reduction Policy Outcome and Status

Poverty reduction is both an end goal of all sector activities and an outcome of dedicated poverty reduction activities. Poverty reduction as an end goal is addressed in the following paragraph. In this paragraph we address poverty reduction as an outcome of targeted activities as presented in the previous paragraph.

Returning to the three categories of targeted poverty reduction as follows:

- pro-poor policy and resource allocation;
- targeted poverty program towards certain geographical areas, socio-economic or other special groups; and
- poverty reducing actions such as social funds and community development activities;

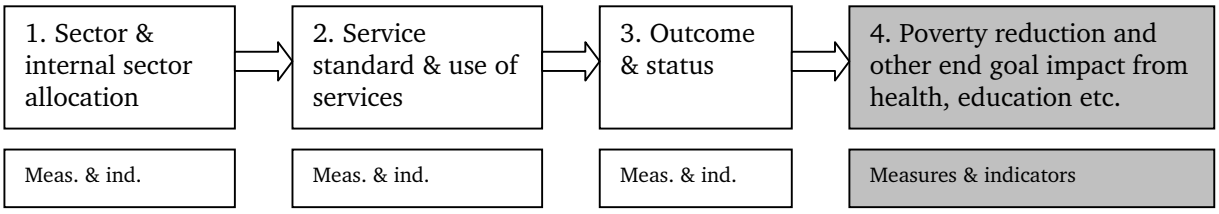
one might again assume that pro-poor policy and resource allocation is included in the sector monitoring already presented.

The remaining focus would then be on programs, projects and activities targeting certain geographical areas, socio-economic or other special groups and the main recommendation is again to focus on general sector indicators, but disaggregated for geographical areas or socio-economic groups.

## 3.22. End Goals and Macro Level Policy

A positive outcome from all the sectors presented above is designed to contribute towards poverty reduction and it is assumed that reduced poverty has a positive feedback on overall economic and social development. This chapter is completed by a presentation of end goals and macro level policy, while the next chapter address the links within each sector from input to output to outcome and whether and how the outcome of each sector contributes to poverty reduction.

**3.32. Monitoring Chain - Poverty reduction and other end goals**




## 3.23. The Ultimate Goal: Poverty Reduction and other End Goals

The ultimate goals of all the efforts in social sector improvements are poverty reduction and human, social and economic development. Both policy priorities and the objectives for short and long term improvements of human well-being and quality of life are changing over time and across countries. Policies are then designed in order to achieve some improvements along some dimensions. Hence we would always like to compare the changes in sector outcome with one or more dimensions of overall objectives.

Ideally we would like focus on real measures. Examples of such measures are overall resource allocation to each sector or sub-sector, a complete picture of access to services of different standards and the use of these services by different groups. The next focus is on measures of the status obtained such as profile and level of education and finally reduction of poverty along any dimension. For some of these measures, information is being collected on a regular basis. However, for many dimensions, the overall measures are not known and it is too expensive or may be even impossible to collect information. We are then presenting internationally acknowledged indicators for monitoring.

### 3.23.1. The ultimate goal: Poverty reduction and other end goal traditions

There are several traditions and academic schools for how to measure poverty, other end goals and human,

social and economic development. Given the need for systematic monitoring, the following three traditions are central in a poverty reduction perspective:

- Economic growth.
- The Human Development Index family tradition and Life expectancy.
- Economic Well-being: Money metric poverty indicators measuring expenditures and consumption; inequality; and child malnutrition.

In order to capture all main dimensions included in the poverty concept of different traditions and academic schools, you would also need to include other important traditions as 'Quality of life'; 'Economic, social and human capital' and 'Participatory/ empowerment' traditions. They are all addressing important issues that you could argue are dimensions of poverty. But a common factor is that currently there are no established traditions for how to conduct a systematic monitoring.

In order to capture all main dimensions included in the poverty concept of different traditions and academic schools, you would also need to include other important traditions as the Physical Quality of Life tradition constructed by Morriss D. Morriss and promoted by UNDP (refer to Qizilbash, 1997), the Quality of Life tradition in North American and European countries (e.g. Campbell, Converse, and Rodgers, 1976), various traditions emphasising not only economic and human capital but also social capital (such as Grootaert and van Bastelaer, 2002), and several participatory/ empowerment traditions during the last fifteen years (e.g. Rietbergen-McCracken, 1998). They are all addressing important issues which are dimensions of poverty. Currently there are however hardly any established traditions on how to conduct a systematic monitoring of these dimensions. There are several examples of systematic use of participatory poverty analysis, but the focus is on analysis rather than monitoring (Rietbergen-McCracken, 1998). There is also quite a number of works to develop methods for measuring social capital (such as Grootaert and van Bastelaer, 2002), but again currently with an analytical rather than a monitoring approach.

### 3.23.2. Economic growth.

Economic growth is well established as the central indicator of economic development. Economic growth is first and foremost measured at the national level. In industrialised countries measures of economic growth might also be available at regional level, but this disaggregated information is usually not available in developing countries.

At the national level, the Gross Domestic Product (GDP) tells what the residents of a certain country produce during a year. If you subtract from the value of the GDP the financial income and salary transactions sent to other countries and add what is received, you get the Gross National Income (GNI). The GNI was up to the 1990s called Gross National Product (GNP) and still is by some. Hence the GNI (or GNP) tells what is available for a certain country for consumption and investments.

It might be necessary to follow both. To monitor the impact of economic growth, i.e. how the money is allocated, the GNI or GNP would best serve the purpose. However, to monitor how the economy works, or the impact of better education and health on economic growth, monitoring of GDP would usually best serve the purpose. In any case it is necessary to control for price changes and real value compared with US$ as a reference currency. To monitor how the economy works, deflation based upon real exchange rates will serve. However to monitor economic welfare and poverty, only adjustments based upon the purchasing power of the national currency will serve the purpose. Hence these issues should be followed by purchasing power parity adjusted US$ or PPP$[13].

### 3.23.3. Human Development Index tradition and Life Expectancy

The United Nations Development Programme (UNDP) has a long history of measuring other end goal dimensions than economic growth. The Human Development index family based upon elements from the old Physical quality of life index was well established in the 1990s. It now comprises the traditional Human Development Index, the Gender Development Index and the Poverty Index. All these are composite indices comprising at least three dimensions. The dimensions might have equal weights such as 3 dimensions each carrying a weight of 1/3. Any other set of weights adding up to 1(one) may apply, dependent upon what is a reasonable balancing between the dimensions actually included.

**Human Development Index (HDI):**
This is the original index, calculated and presented each year by UNDP, comprising the following dimensions:

- life expectancy at birth,
- adult literacy (0 - 100 per cent),
- combined gross enrolment rate for each of primary, secondary, tertiary enrolment, and
- real GDP per capita

**Gender-related Development Index (GDI):**
GDI is similar to Human Development Index, but adjusted for gender disparity. The HDI is the upper limit for a GDI.

[13] PPP$ are adjusted not only according to the official exchange rate, but also according to the prices in the country compared with prices in United States of America as the reference country.

**Poverty Index**
The UNDP poverty concept focuses on poverty as a multidimensional indicator of lack of human welfare. It focuses on the same dimensions as the HDI but addresses the share of the population missing a certain standard along one of the dimensions, each given a weight of 1/3:

- Lack of longevity, measured by per cent of the population expected to die before age 40
- Lack of knowledge, measured by per cent adults who are illiterate
- Lack of economic provisioning, based on three sub dimensions: lack of access to health service, lack of access to safe water, child malnutrition.

*3.23.3.1 Life expectancy at birth*
Life expectancy at birth is the classic indicator of human development (as GDP is of economic development) and is promoted by all concerned agencies. There is a discussion within the health sector on a so-called disability adjusted life expectancy (DALE), but this is promoted as a supplement to life expectancy rather than being complementary.

Life expectancy was an obvious indicator to include. As most countries do not have population registers, a population census or a huge sample survey is required for calculations, hence parameters are only calculated every ten years.

With the large increase in death rates caused by widespread HIV/Aids related infectious diseases, life expectancy is however not a proper indicator of poverty, human development or related end goals.

*3.23.3.2 Conclusion on Human Development and related indices*
The Human Development Index and the later relative indicators were developed to monitor, rank and compare the relative situation in one country to another. The HDI is reflected by the Millennium Development Goals, promoted by UNDP and others but does not include the whole HDI index family. Given the need to retain a short list, we do not propose to include this HDI index family among those given first priority under the approach presented here. We recommend rather including indicators that can be used for straightforward human development monitoring.

### 3.23.4. Economic well-being
The UN Social Summit in Copenhagen in 1995 focused on reduction of extreme poverty. UN Statistical Commission, UN ECOSOC and PARIS21 have recommended three types of indicators to monitor poverty:

- money metric poverty indicators,
- inequality of consumption and expenditures, and
- child malnutrition.

*3.23.4.1 Money metric poverty indicators measuring expenditures and consumption*
*Money metric poverty* is the traditional measure of individual and household poverty. It does include not only income in cash and kind, but also the value of food production for own consumption. Hence it is an indicator of material resources available within a given time period. It is both an end goal, and a frequently used measurement of resources available for each individual household in order for them to reach their end goals and also used as an indicator of the economic welfare of the household.

Theoretically one would argue for measures of both economic stocks and flows. The Millennium Development Goals do include indicators on economic stocks, security of tenure, and plans to address the insecurity of slum dwellers. One could also argue well for the need to monitor stocks to learn about poor peoples ability to survive external shocks such as sudden injuries or diseases or other shocks leading to loss of income. But flow measures serve well as indicators of changes and levels at the aggregate level.

*Income poverty* is an important indicator both because consumption of own production and other income is essential for any household trying to achieve human welfare, but also because it will directly and quickly reflect any policy decisions by the authorities relating to material resources.

The concept and label "Poverty measurement" has been used throughout the last century to measure income and access to free or subsidised public resources such as school and health service. During the 1990s, when the poverty label was used as a multidimensional concept of poverty, the label "Income poverty" was introduced. The term is somewhat misleading. Income poverty is correctly used as an indicator of income available for consumption expenditures, but it will always include consumption of own production. Rather than by income, poverty should be measured by expenditures and consumption, adjusted for transfers[14].

There are two distinct schools of poverty measurement and several combinations of these are:

- **Absolute poverty lines.** Absolute poverty lines are based upon a fixed commodity basket and the costs of these commodities. This basket is a comprehensive list of all necessities.
- **Relative poverty lines.** Relative poverty lines refer to a certain distribution of consumption expenditures and set a cut-off such as 'half the median total consumption' or 'the 30$^{th}$ percentile'. Such a relative poverty line is either recalculated for each new measurement or set once for a longer period, say ten years.

[14] Due to the fact that direct measurement of income will underestimate the real income.

- **Combined absolute and relative poverty lines.** The main combination of absolute and relative poverty lines is absolute for food requirements and then with an addition of the same share of non-food expenditures as in a reference population. The latter could either be the complete population or a target group such as the poorest 30 per cent. The World Bank one-US-dollar-a-day poverty line was originally used as a poverty line, but has then been used as a reference for poverty lines across the world without any reference point.

Ideally we would want to recommend one poverty line approach, but it is difficult to select one which is both poverty relevant at the national level and could be used for international comparisons. The World Bank "solved" this issue by using two or even three poverty lines for each country. WB uses whatever national poverty line is well established at the national level and then the one-dollar-a-day poverty line (or even two-dollar-a-day) for international comparisons. UNDP[15] argues "the use of the same poverty line in different countries can be very misleading because of variation in "necessary" commodities." They then refer to different prevailing patterns of non-food consumption and state that "... the minimum income needed to escape social estrangement can be quite different between communities." This argument applies even more across countries or across urban versus rural communities.

The same arguments can be used to advocate the combined absolute and relative poverty line approach, i.e. a poverty line absolute for food consumption (based upon FAO calorie requirement recommendations) and then with an addition of the same share of non-food expenditures as in a reference population. Such a combined approach will reflect the current need and preferences for non-food consumption and hence the substantial differences in income " needed to escape social estrangement ... between communities." Martin Ravallion in the World Bank is an advocate for this approach[16], but currently the World Bank has landed on an even simpler approach for a comparative poverty line, i.e. the one-PPP-dollar-a-day poverty line. Angus Deaton (2000) has addressed some of the problems with this approach. He does not reject the one-PPP-dollar-a-day poverty line but ends up advocating the FAO calorie requirement based approach stressing that these lines are not likely to show major deviations. His main emphasis is on local credence; a fixed common national poverty line sustained for a long period of time and properly designed household surveys to provide consumption and expenditure information.

The first Millennium Development Goal addresses both poverty measured by a one dollar a day[17] and hunger. Hunger is proposed measured by "proportion of population below minimum level of dietary energy consumption". So far this is usually calculated by a FAO model of the relationship between consumption measured in values and volume/calories. It may of course also be measured directly at country level, when a household budget survey or consumption and expenditure survey is conducted. It is very easy to advocate for such an indicator from a policy point of view and it is also easily adapted to country level standards and consumption patterns. It definitely deserves support and to be included among poverty indicators.

Despite the professional arguments, a main argument is still how widely applied an approach is and currently there is only one candidate for comparative statistics, the one-PPP-dollar-a- day poverty line. At the national level one should be ready to accept any fixed poverty line with local credibility. If it is necessary to develop a poverty line, it is recommended to consider fixed poverty line approach. This would comprise a core basket of food according to FAO calorie recommendations (for an adult man 2100 kcal per day) according to average prices and an additional basket of non-food reflecting the average share of non-food versus food for the population around the poverty line (operationalised as the deciles of households around the poverty line). The core food basket will define the extreme poverty line and the combined food basket and non-food basket will define the standard poverty line. As shown briefly by Lanjouw and Ravallion (1996) and in detail by Lanjouw and Lanjouw (1997) is a robust technique for assessing poverty using data from different sources.

When the poverty line is fixed for an adult man, the poverty line for additional household members being adult woman, boys and girls of different age groups may be calculated using an equivalence scale assuming a distribution in the household according to this scale. Three indicators will then be applied to provide information on poverty:

- $P_0$ - Poverty headcount or incidence tells the *share* of the population living in households below the poverty line. This is the standard measure used for identifying where and amongst which social-economic groups poverty is widespread.
- $P_1$ - Poverty gap shows the *average distance* up to the poverty line of the population living in households below the poverty line. This measure will also tell how much resources are needed in theory to lift all poor out of poverty, i.e. just up to the poverty line. In reality there is quite some leakage and hence more resources would be

[15] UNDP (1997:18) Human Development Report 1997.

[16] Presented such as in Ravallion (1992).

[17] It does not tell whether this is PPP$ or currency exchange $.

needed, but the measure is well designed as an indicator.
- $P_2$ - Poverty intensity shows the concentration of the poor (measured by the *squared distance) away from or* up to the poverty line among the population living in households below the poverty line. Poverty intensity reveals also how deep rooted the poverty is in various areas and socio-economic groups. The common trend is that the poverty head count is larger in rural areas, but the poor groups in the capital and other large urban centres are often even poorer than the rural poor. The $P_2$ indicator will tell us where this is the case and where special efforts are needed.

*3.23.4.2 Inequality of consumption and expenditures*
Traditionally, statisticians have presented data on distribution across the society, not by identifying the share below a certain line, but rather by presenting the overall distribution including poor and better off alike. This has been done in various levels of details: a Lorenz curve showing the overall distribution by graphical presentation, by presenting the deciles or quintiles of the distribution or by a single parameter as the Gini-index. All these indicators are usually compiled for income measured by the proxy indicator being total consumption and expenditures per capita. UN Statistical Commission, UN ECOSOC, OECD/DAC, World Bank, UNDP and PARIS21 are recommending one of these indicators: "Inequality: Poorest fifth's share of national consumption" as a poverty indicator.

It is of course also an indicator of distribution and the joint picture of poverty indicators (head count and/ or gap) and this distributional indicator will tell both whether the policy has been pro-poor or not and whether there is a space for redistribution.

*3.23.4.3 Food insecurity*
It should be stressed that the food insecurity tradition usually focuses on food insecurity either at national level or at the local level in a famine situation. With such a focus, monitoring usually addresses the food balance at national level or extreme food shortage during drought or other catastrophe situations.

The Millennium Development Goals focus however primarily on long-term development and aims at following individual or household level hunger. This focus will include fluctuations during drought and catastrophe situations but not food insecurity at national level.

From a Millennium Development Goals perspective, hunger is an important dimension. One of the important changes from the International Development Goals to the Millennium Development Goals was just adding hunger to the extreme poverty target of the earlier development goal, now being MDGoal 1 - Eradicate extreme poverty and hunger. MD Goal 1 includes two targets, one to reduce extreme poverty to the half and another to reduce hunger to the half. This second target is to be monitored by two indicators, prevalence of underweight children (under five years of age) and proportion of population below minimum dietary energy consumption.

Prevalence of underweight children is to be measured through surveys. But since anthropometric measures might be included in demographic, health, and integrated surveys, and in dedicated nutrition and anthropometric surveys, such information is usually collected quite frequently.

Measurement of the dietary energy consumption requires also surveys and is usually measured at household level by household budget surveys. Such information might also be collected at individual level by dietary surveys, but these are hardly ever conducted at large scale and do not lend themselves to monitoring.

Dietary intake could be calculated directly or indirectly based upon household surveys. The direct method requires volume information, which is often included for food items, or as a second best option, disaggregated price information. For some reason it has not been a common practice to calculate and publish such information. However during the last years, in a number of countries, information on dietary intake has been calculated when preparing for a dietary intake based poverty line and could then easily be calculated for different calorie levels.

Currently the only method regularly used is the FAO approach based upon a statistical model for the relationship between total expenditures and calorie-consumption. FAO uses a statistical model for the relationship between total expenditures and calorie-consumption, to calculate the dietary intake for each household. Based upon a normal distribution of the calorie requirements per adult equivalent, they calculate the share of the population between the lower cut off point. While FAO and WHO calculate an average calorie-requirement to 2100 kcal, and the minimum is 1500 kcal per adult equivalent per day. When interpreting the results the reader should be aware that only around 5 percent of the population will get enough calories below this line, while quite a proportion will get too little even well above this line[18].

*3.23.4.4 Child malnutrition.*
Proper child nutrition has been promoted as a human end goal for decades. It has a long history as a component of the Basic Needs approach promoted by UNICEF. FAO has also actively promoted child

[18] In fact half the population need 2100 kcal or more.

nutrition under their food security and food balance approaches. Already in the 1970s child malnutrition was surveyed both as an end-goal and as an indicator of poverty. To some degree the focus on child malnutrition faded out with integrated rural development approach and public agricultural marketing in the end 80s. However, as argued well by the Human Development Report, child malnutrition is a proper indicator of poverty and is an indicator of an important real end goal i.e. a proper nutritional and health status of children.

The set of anthropometric indicators includes the following ones:

- wasting or weight-for-height, measuring current nutritional status
- stunting or height-for-age, measuring nutritional status over time
- malnutrition or weight-for-age, measuring overall nutritional status**.**

As a poverty indicator, child malnutrition or prevalence of underweight for age for children under five years of age has been selected and recommended by UN Statistical Commission, UN ECOSOC, OECD/DAC, World Bank, UNDP and PARIS21.

### 3.23.5. Our recommendation for poverty reduction measures and indicators

Since there is no single international recommendation for an income poverty line, we recommend as the World Bank to present two poverty lines and two sets of poverty measures:

- The national poverty line whether based upon an absolute, a relative or a combined approach.
- The one-dollar-a-day poverty line.

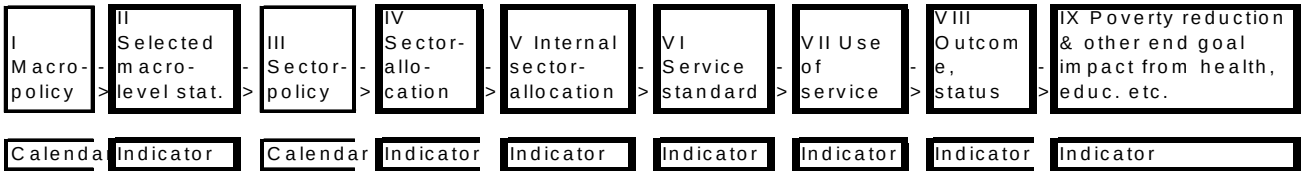
For each of these poverty lines we recommend to present the three poverty indices $P_0$, $P_1$, and $P_2$.

**3.33. Indicators for internationally comparable poverty measures and other end goals**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability[19](A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| Economic growth, growth in Gross Domestic Product, GDP (PPP$) per capita. | All agencies | A,a |
| Human Development Index | UNDP | A,a |
| Gender Development Index | UNDP | A,a |
| Poverty Development Index | UNDP | A,a |
| Poverty based upon national poverty line, Poverty incidence P0, Poverty Gap P1, Poverty Intensity P2 | PARIS21, World Bank | A, 3-10 |
| IDG/MDG - 1. & 2. Extreme poverty based upon one-PPP$-per-day poverty line, MDG 1 Poverty incidence P0, MDG 2 Poverty Gap P1, Poverty Intensity P2 | PARIS21, World Bank | A, 3-10 |
| MDG - 5. Proportion of population below minimum level of dietary energy consumption | MDG, UNDP | A, 3-10 |
| IDG/MDG - 3. Inequality: Poorest fifth's share of national consumption | UNSC, UN ECOSOC, WB, UNDP, PARIS21 | A, 3-10 |
| IDG/MDG - 4. Child malnutrition or prevalence of underweight for age for children under five years of age | UNStat. Commission, UN ECOSOC, WB, UNDP, PARIS21, UNICEF | A, 5-10 |
| IDG. Life expectancy at birth | UN Stat. Commission, UN ECOSOC , WB, UNDP, PARIS21, UNICEF | A, 10 |

[19] This column presents the view of the authors based upon their obviously limited and possibly biased experience, but is still an indicator of whether each indicator in the list is used in more or less all countries, just a few or none, as well as the most common frequency of publication, annually, every n-th year or just on ad hoc basis.

**3.34. Complete monitoring chain - Macro level, general data, & background information**




## 3.24. Macro level, general data, & background information

### 3.24.1. Macro policy

World Bank, IMF and others have tried to present macro policy across countries. For the Africa region two articles, IMF (1998) "Financial Sector Development in Sub-Saharan African Countries" and World Bank (1994) "Adjustment in Africa, Reforms, results, and the road ahead", are very interesting examples on presentation and analysis of policy decisions in a statistical manner. This type of work requires a number of controversial categorisation. For research purposes such analysis is very interesting but hardly for a systematic statistical presentation. The IMF (1998) is however an interesting example on how legal economic framework and policy decisions could be presented at an international level.

However, we do expect that this type of information on legal frameworks and policy decisions be mainly presented at the national level.

**Macro resource allocation**

In our context we are only interested in a limited set of macro policy and macro policy indicators. The focus should be on a few measures/ indicators and a list of major events at country level.

The measures and indicators would focus on the aggregate level of public spending, the public budget balance/ deficit, and the composition of a possible public budget deficit (revenues/ expenditures). Whether to include factors affecting the sustainability of a budget deficit is still to be considered. If so, a range of measures and indicators need to be included, such as projections of debt to GDP ratio, target inflation rate, real interest rate and growth rate.

An alternative approach would be not to move into statistics presenting the sustainability of a budget deficit except for extreme cases and then at country level. Then we could limit the macro economic measures/ indicators to the three issues listed above.

### 3.24.2. General economic, social and demographic data and background information

Presenting general data serves several purposes. First, there is a need to present the basic information of a country. Second there is a need to present the country within a regional context or within the global context. Third there is a need to present background data to be used for a number of data constructs such as Gross National Product, Consumer Price Index, the size of the Labour Force or the number of Children at school age. As far as possible these background data are presented when presenting the data constructs, but some data are quite general that it would be better to give an overall presentation.

*3.24.2.1 Population*

Population measures and indicators:

- PARIS21: Total population
- Estimated population size by age- and sex-groups
- PARIS21: Total Fertility Rate

*3.24.2.2 Labour force, dependency ratio*

Labour force:

- Share of population 15-59 years of age in labour force by gender and urban/ rural dimension

Dependency ratio:

- Number of dependants (Children 0-14 years, elderly 60+ years, disabled persons) per breadwinner (non-disabled 15-59 years of age).

*3.24.2.3 Gross National Product*

International Monetary Fund (IMF) in "World Economic Outlook" (IMF, 1998) presented twice a year does the main reference presentation of international economic statistics. This source includes national accounts economic statistics based upon the SNA standard applied in each country. Currently some countries have adopted the new SNA 1993 standard (UN Statistics Division, 1994) while others remain with the previous standard. The new standard includes a broader set of services and hence tends to increase the overall Gross National Product (GNP) and related measures.

The IMF-report presents the following measures and indicators of interest within our context:

- Gross domestic product (GDP)
- IDG - Gross national product (GNP)
- IDG - GNP per capita
- Consumer Price Indices (CPI)
- GDP deflators
- Exchange rate US$
- PPP $ rate
- IDG - External debt (US$) as percentage of GNP
- Decadal growth rate of GNP per capita (US$)

- IDG - Investment as percentage of GDP
- IDG - Trade as percentage of GDP
- IDG - Aid as percentage of GNP

*3.23.2.4 Price indices*

Consumer Price Index. Three options, in priority:

- National composite consumer price index.
- National urban composite consumer price index.
- Capital consumer price index.

If available:

- High and low cost CPI.

Producer price index and price level index for one or two main crops:

- Maize in 90kg bags

Wage index:

- Urban unskilled male and female piece worker wage index
- Rural unskilled male and female piece worker wage index

**3.35. Macro-economic, general and background indicators**

| Measure/Indicator - Name/ Description | Recommended/ used by | Availability (A-all, F-a few, N-none) & Regularity (A-annual, n-every nth year, x-ad hoc) |
|---|---|---|
| IDG - External debt (US$) as percentage of GNP | PARIS21, UNDAF/CCA | A,a |
| Decadal growth rate of GNP per capita (US$) | UNDAF/CCA | A, 10 |
| IDG Investment as percentage of GDP | PARIS21 | A,a |
| IDG - Trade as percentage of GDP | PARIS21, UNDAF/CCA | A,a |
| IDG - Aid as percentage of GNP | PARIS21 | A,a |
| Public expenditure - Total public expenditure and lending minus repayment | IMF | A,a |
| Public revenue - Total revenue and grants | IMF | A,a |
| Public expenditure in percent of GDP - Total expenditure and lending minus repayment in percent of GDP | IMF | A,a |
| Public revenue in percent of public expenditure - Total revenue and grants in percent of GDP | IMF | A,a |
| IDG - Total population | PARIS21, UNDAF/CCA | A, 10 |
| Estimated population size by age- and sex-groups | MNSDS, UNDAF/CCA | A,a |
| IDG - Total fertility rate | PARIS21, UNDAF/CCA | A, 5 - 10 |
| Share of population in labour force | | A, 10 |
| Dependency ratio | | A,a |
| | | A, 5 - 10 |
| Gross domestic product (GDP) | UN Stat. Comm. (SNA 1994), World Bank, IMF | A,a |
| IDG - Gross national product (GNP) | PARIS21, UN Stat. Comm. (SNA, 1994), World Bank, IMF | A,a |
| IDG - GNP per capita | MNSDS, PARIS21, UNDAF/CCA | A,a |
| Consumer Price Indices CPI | UN Stat. Comm. (SNA 1994) | A,a |
| National composite consumer price index. | Alternatives | F, A |
| National urban composite consumer price index. | Alternatives | F, A |
| National capital consumer price index. | Alternatives | F, A |
| High and low cost CPI. | Alternatives | F, A |
| Crop price index | | F,x |
| Urban unskilled male and female pieceworker wage index | | x |
| Rural unskilled male and female pieceworker wage index | | x |
| GDP deflators | UN Stat. Comm. (SNA 1994) | A,a |
| Exchange rate US$ | All agencies | A,a |
| PPP $ rate | UN Stat. Comm. | A,a |
| IDG - External debt (US$) as percentage of GNP | PARIS21, UNDAF/CCA | A,a |
| Decadal growth rate of GNP per capita (US$) | UNDAF/CCA | A, 10 |
| IDG - Investment as percentage of GDP | PARIS21 | A,a |
| IDG - Trade as percentage of GDP | PARIS21, UNDAF/CCA | A,a |
| IDG - Aid as percentage of GNP | PARIS21 | A,a |
| Consumer Price Indices CPI | UN Stat. Comm. (SNA, 1994) | A,a |

# 4. Statistical relationship between resource allocation, service standard, outcome, end goal impact and feed back

As already stressed, this approach does not aim at testing any causal relationship, but has a more modest objective. The presented approach allows for a joint presentation of statistical information on the development over time or across geographical and socio-economic categories for two and two steps of the policy chain from resource allocation through service standard, outcome, end goal impact and feedback for each of the following sectors:

- Health
- Education
- Water and sanitation
- Smallholder agriculture
- Urban informal sector and employment

Presenting two sets of statistical information, as follows, might do this:

- First, to present statistical information for each separate step in this policy chain. This presentation should include both information over time and across geographical areas and socio-economic groups.
- Second, to present statistical information linking two and two steps.

The former set is already presented.

The following figures (figures 4.1-4.6b) present the latter set. For each social sector and for each step in the policy chain a set of core indicators is selected. By combining the indicators at a certain step, say **m,** with all indicators, say **n**, at the subsequent step in the chain, a set **m** x **n** bivariate associations is obtained to present the relationships between these two steps for the sector in question.

The information is to be presented from two perspectives:

- country-wise, with focus on the country and development over time
- comparative, with focus on the same relationship for multiple countries, not letting go the longitudinal dimension

To facilitate comparisons, whenever relevant, 1990 is used as a 'base' year, and average values for African countries (where data is available) are taken as benchmark values when indicators are expressed as relative indices. We have chosen 1990, as this is the base year for the quantified development goals as approved by the series of UN Conferences held in the 1990s and expressed in the PARIS21 initiative.

End goal indicators and measures are common for all three sectors.

In a graphical manner the links between each level are presented in the following pages, first sector by sector and then summarized in one single presentation.

**4.1. Indicators for health sector system-monitoring**

## Health sector

**INPUTS**

**Resource allocation to health sector:**
H1.1. Public and private expenditure
H1.2. Share of public expenditure
H1.3. Public and private expenditure for primary health care
H1.4. Share of private expenditure to primary health care

**OUTPUTS**

**Service standards and use:**
H2.1. Vaccination coverage*
H2.2. MDG 17 Births attended by skilled personnel
H2.3. Access to PHC (% within 5/10/15 km)
H2.4. Doctors per 100 000 population
H2.5. MDG 19 Contraceptive prevalence rate

**OUTCOME**

**Outcome and status:**
H3.1. MDG 14 Infant mortality rate
H3.2. MDG 13 Under 5 mortality rate
H3.3. MDG 4 Prevalence of underweight for age for children under 5
H3.4. MDG 16 Maternal mortality rate
H3.5. MDG 18 HIV prevalence among 15-24-year-old pregnant women
H3.6. TB prevalence (per 100 000)

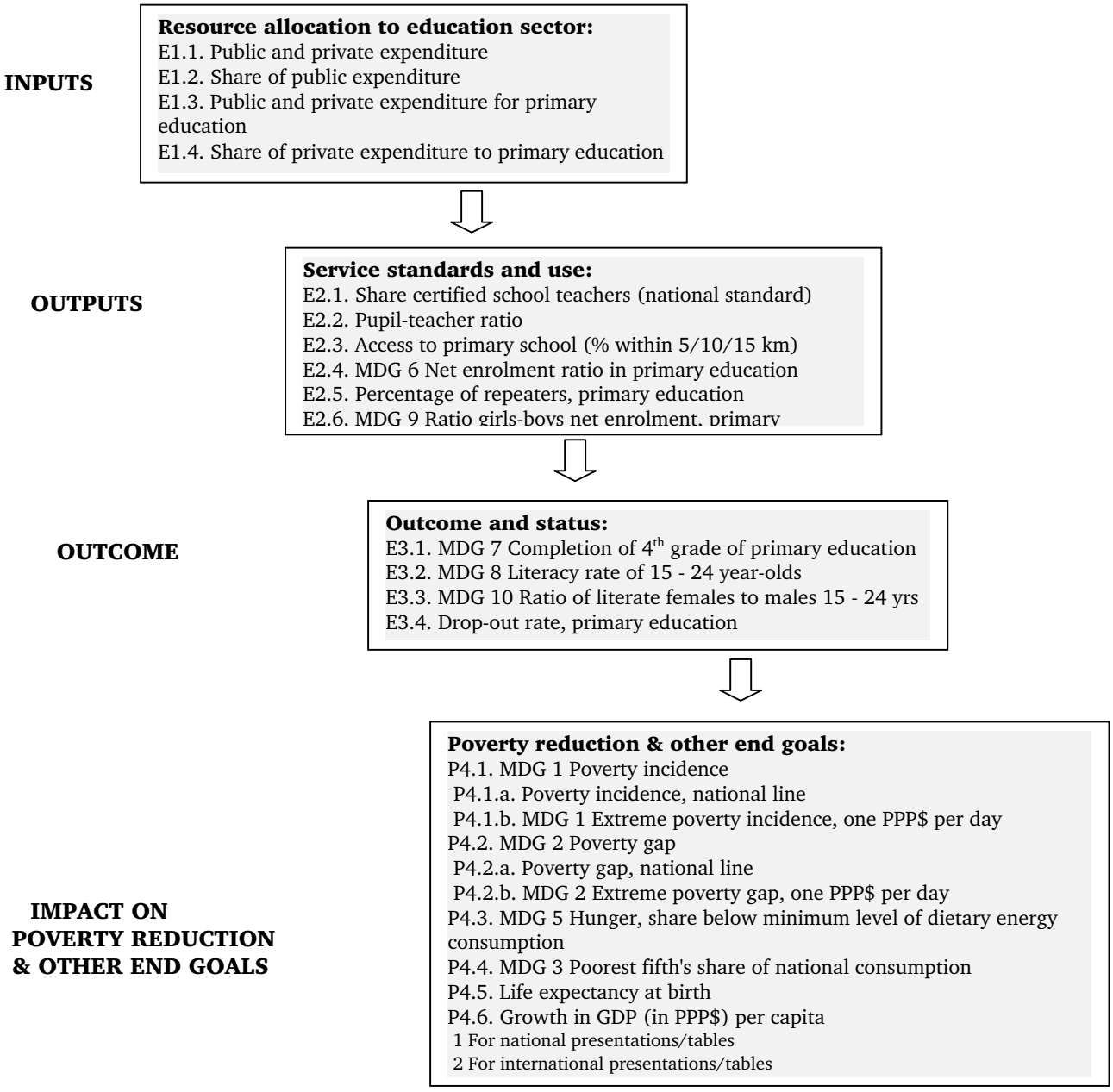
**IMPACT ON POVERTY REDUCTION & OTHER END GOALS**

**Poverty reduction & other end goals:**
P4.1. MDG 1 Poverty incidence
P4.1.a. Poverty incidence, national line
P4.1.b. MDG 1 Extreme poverty incidence, one PPP$ per day
P4.2. MDG 2 Poverty gap
P4.2.a. Poverty gap, national line
P4.2.b. MDG 2 Extreme poverty gap, one PPP$ per day
P4.3. MDG 5 Hunger, share below minimum level of dietary energy consumption
P4.4. MDG 3 Poorest fifth's share of national consumption
P4.5. Life expectancy at birth
P4.6. Growth in GDP (in PPP$) per capita
1 For national presentations/tables
2 For international presentations/tables

* - Some combinations such as H2.1 x H3.5, H2.2 x H3.6 and H3.5 x H4.6 are considered to be of minor relevance and are not planned for presentation.

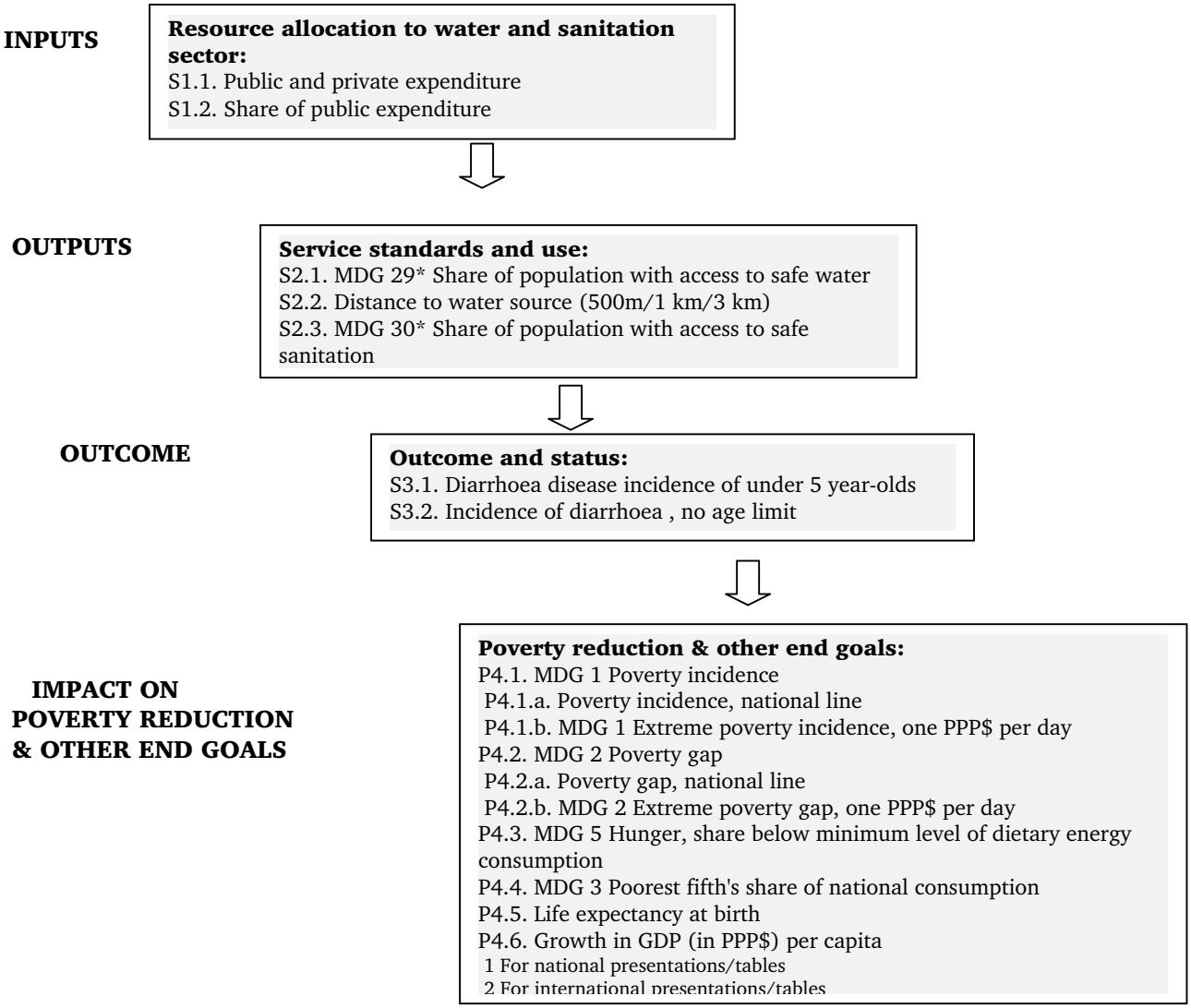
4.2. Indicators for education sector system-monitoring

## Education sector



**4.3. Indicators for water and sanitation sector system-monitoring**

## Water and sanitation sector



**4.4. Indicators for smallholder agriculture sector system-monitoring**

## Smallholder agriculture sector

**INPUTS**

**Resource allocation & agro-economic conditions:**
A1.1. Agricultural extension service; Pub. & priv. costs
A1.2. Agricultural public marketing support (inputs and produce); Pub. costs
A1.3. Rural feeder roads; Pub. & priv. investment costs
A1.4. Agricultural irrigation schemes; Pub. & priv. investment costs
A1.5. Rain fall during critical period
A1.6. Access to land, share cultivating enough land to feed family
A1.7. Access to urban and town markets within 50 km

**OUTPUTS**

**Service standards and use:**
A2.1. Extension service, visits/ ext. services received
A2.2. Access to crop markets, 2-4 major crops
A2.3. Access to feeder roads in village
A2.4. Producer price as share of consumer price, 2-4 crops, harvest &

**OUTCOME**

**Outcome and status:**
A3.1. Annual production in value terms for 2-4 main crops per adult person & per family member
A3.2. Annual production in volume terms for 2-4 main crops per adult person & per family member

**IMPACT ON POVERTY REDUCTION & OTHER END GOALS**

**Poverty reduction & other end goals:**
P4.1. MDG 1 Poverty incidence
P4.1.a. Poverty incidence, national line
P4.1.b. MDG 1 Extreme poverty incidence, one PPP$ per day
P4.2. MDG 2 Poverty gap
P4.2.a. Poverty gap, national line
P4.2.b. MDG 2 Extreme poverty gap, one PPP$ per day
P4.3. MDG 5 Hunger, share below minimum level of dietary energy consumption
P4.4. MDG 3 Poorest fifth's share of national consumption
P4.5. Life expectancy at birth
P4.6. Growth in GDP (in PPP$) per capita
1 For national presentations/tables
2 For international presentations/tables

**4.5. Indicators for urban informal sector system-monitoring**

# Urban informal sector

**INPUTS**

**Resource allocation to urban informal sector:**
I1.1. Public or private work programs; Pub. & priv. costs
I1.2. Informal sector extension (advise and credit) service; Pub. & priv. costs
I1.3. Training programs; adult learning, artisal, vocational training. Pub. & priv. costs

**OUTPUTS**

**Service standards and use:**
I2.1. Urban population with access & knowledge about advise, credit, & entrepreneur schemes.
I2.2. Urban labor force in public work programs, paid NGO activities etc.
I2.3. Youth in artisanal training programs in urban areas
I2.4. No. of public institutions to visit to establish a one-person formal sector company

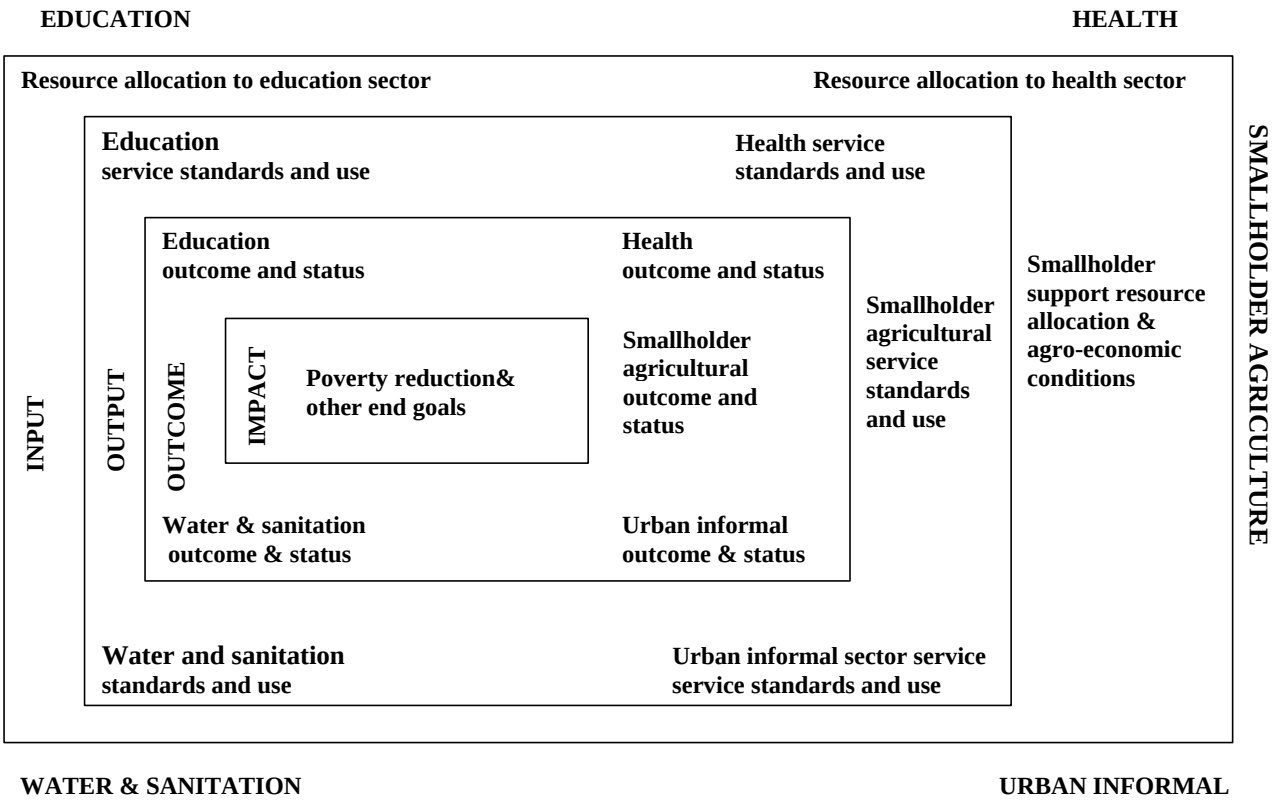
**OUTCOME**

**Outcome and status:**
I3.1. No of informal sector establishments, size & sub-sector
I3.2. Size of urban unskilled labor force as per cent of labor force
I3.3. Share of urban unskilled workers in informal sector
I3.4. Share of informal sector establishments moving to formal sector

**IMPACT ON POVERTY REDUCTION & OTHER END GOALS**

**Poverty reduction & other end goals:**
P4.1. MDG 1 Poverty incidence
P4.1.a. Poverty incidence, national line
P4.1.b. MDG 1 Extreme poverty incidence, one PPP$ per day
P4.2. MDG 2 Poverty gap
P4.2.a. Poverty gap, national line
P4.2.b. MDG 2 Extreme poverty gap, one PPP$ per day
P4.3. MDG 5 Hunger, share below minimum level of dietary energy consumption
P4.4. MDG 3 Poorest fifth's share of national consumption
P4.5. Life expectancy at birth
P4.6. Growth in GDP (in PPP$) per capita
1 For national presentations/tables
2 For international presentations/tables

**4.6a Simplified presentation of Indicators for five sectors on inputs - outputs - outcome - impact system-monitoring**



**4.6b Comprehensive presentation of indicators for five sectors on inputs - outputs - outcome - impact system-monitoring**

**EDUCATION**

**Resource allocation to education sector:**
E1.1 Public and private expenditure
E1.2 Share of public expenditure
E1.3 Public and private expenditure for primary education
E1.4 Share of private expenditure to primary education

**HEALTH**

**Resource allocation to health sector:**
1.1 Public and private expenditure
H1.2 Share of public expenditure
H1.3 Public and private expenditure for primary health care
H1.4 Share of private expenditure to primary health care

**Service standards and use:**
E2.1 Share of school teachers certified to teach (national standards)
E2.2 Pupil-teacher ratio
E2.3 Access to primary school (% within 5/10/15 km)
E2.4 MDG 6 Net enrolment ratio in primary education
E2.5 Percentage of repeaters, primary education
E2.6 MDG 9 Ratio girls to boys net enrolment in primary education

**Service standards and use:**
H2.1 Vaccination coverage
H2.2 MDG 17 Births attended by skilled personnel
H2.3 Access to PHC (% within 5/10/15 km)
H2.4 Doctors per 100 000 population
H6.5 MDG 19 Contraceptive prevalence rate

**INPUT**

**OUTPUT**

**OUTCOME**

**Outcome and status:**
E3.1 MDG 7 Completion of 4th grade primary educ.
E3.2 MDG 8 Literacy rate of 15 - 24 year-olds
E3.3 MDG 10 Literate females/ males 15 - 24 yrs
E3.4 Drop-out rate, primary education

**Outcome and status:**
H3.1 MDG 14 Infant mortality rate
H3.2 MDG 13 Under 5 mortality rate
H3.3. MDG 4 Prevalence, underweight for age, child. < 5 yrs
H3.4. MDG 16 Maternal mortality rate
H3.5. MDG 18 HIV prevalence 15-24-yrs pregnant women
H3.6 TB prevalence (per 100 000)

**IMPACT**

**Poverty reduction & other end goals:**
P4.1. MDG 1 Poverty incidence
P4.1.a. Poverty incidence, national line
P4.1.b. MDG 1 Extreme poverty incidence, one PPP$ per day
P4.2. MDG 2 Poverty gap
P4.2.a. Poverty gap, national line
P4.2.b. MDG 2 Extreme poverty gap, one PPP$ per day
P4.3. MDG 5 Hunger, below min. dietary energy consumption
P4.4. MDG 3 Poorest fifth's share of national consumption
P4.5. Life expectancy at birth
P4.6. Growth in GDP (in PPP$) per capita

**Outcome and status:**
A3.1. Annual production in value terms for 2-4 main crops per adult person & per family member
A3.2. Annual production in volume terms for 2-4 main crops per adult person & per family member

**Service standards and use:**
A2.1. Extension service, visits/ ext. serv. received
A2.2. Access to crop markets, 2-4 major crops
A2.3. Access to feeder roads in village
A2.4. Producer price as share of consumer price, 2-4 crops, harvest & planting time

**Resource allocation & agro-economic conditions:**
A1.1. Agricultural extension service; Pub. & priv. costs
A1.2. Agricultural public marketing support (inputs and produce); Pub. costs
A1.3. Rural feeder roads; Pub. & priv. investment costs
A1.4. Agricultural irrigation schemes; Pub. & priv. investment costs
A1.5. Rain fall during critical period
A1.6. Access to land, share cultivating enough land to feed family
A1.7. Access to urban and town markets within 50 km

**Outcome and status:**
S3.1 Diarrhoea disease incidence of under 5 year-olds
S3.2 Incidence of diarrhoea , no age limit

**Outcome and status:**
I3.1. No of informal sector establishments, size & sub-sector
I3.2. Size of urban unskilled labor force as per cent of labor force
I3.3. Share of urban unskilled workers in informal sector
I3.4. Share of informal sector establishm. moving to formal sect

**Service standards and use:**
S2.1. MDG 29 Percentage of population with access to safe water schemes
S2.2 Distance to water source (500m/1 km/3 km)
S2.3 MDG 30 Percentage of population with access to safe sanitation

**Service standards and use:**
I2.1. Urban pop. with access & knowledge about advise, credit, & entrepreneur.
I2.2. Urban labor force in public work programs, paid NGO activities etc.
I2.3. Youth in artisanal training programs in urban areas
I2.4. No. of public institutions to visit to establish a one-person formal sector

**SMALLHOLDER AGRICULTURE**

**Resource allocation to water and sanitation sector:**
S1.1 Public and private expenditure
S1.2 Share of public expenditure

**Resource allocation to urban informal sector:**
I1.1. Public or private work programs; Pub. & priv. costs
I1.2. Urban informal sector extension (advise and credit) service; Pub. & priv. costs
I1.3. Training programs; adult learning, artisal, vocational training. Pub. & priv. costs

**WATER & SANITATION**

**URBAN INFORMAL**

# 5. A statistical presentation chapter for social sectors

A statistical presentation may be developed in three steps, as follows:
- A tabulation outline based upon data needs for the policy issues identified.
- Demonstration tables based upon information being available at the global level i.e. from multilateral agencies, from the World Wide Web, CD-ROMs, and tabulation reports.
- Pilot country tabulation sub-reports.

In this report, the first two steps are presented, while pilot country tables will follow in two separate volumes.

The data presented are data available at the global level. There are data gaps and some indicators are missing, especially on poverty data.

## 5.1. Review of available data at the international level

The general impression of available data at the global level is characterised as follows:
- If looking for specific data you might not find exactly the preferred indicator for the last year, but some closely related ones with some time lag.
- Data tend to come from a number of different sector sources.
- Published statistical data might or might not be adjusted.
- Studies of time series indicates that some single indicators for a single country shows reasonable changes over time, while comparison of related indicators or with neighbouring countries indicate that consistency across indicators and countries might vary considerably.

The typical information status might be summarised as follows:
- Descriptive data are usually available.
- Comparisons over time within a country require quite some work but will usually yield proper information.
- Comparisons across countries requires caution, comparing trend data is the best option.
- Combining data from two or more sectors might yield interesting findings but requires a special consideration.

The lack of consistent data collection by sector and by country makes it difficult to sort out real impact. Some preliminary findings are as follows:
- Social sector service, social sector use and social sector outcome are all, in general, improving over time.
- In many cases the expected impact is well documented, but the general impression is mixed.

### 5.1.1. Conclusion

Global data might give us a general idea about the impact chain, but in order to understand the impact tabulation, reports at the country level are required.

## 5.2. Illustrative tables and graphs based upon data reported in 2003.

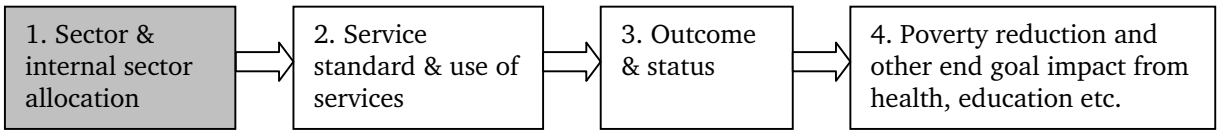
At this stage tables and graphs are included to demonstrate two issues:
- First, what kind of data is available at the international level, through publications from international agencies and/ or through the World Wide Web.
- Second, how can these data be presented in tables, graphs and statistical measures.

Data are presented both across countries (NORAD partner-countries in 2004) and over time. For small-holder agriculture and informal sector, proper data are not available on the international level, hence our focus on social sectors.

Tables, graphs and statistical parameters are presented in two main paragraphs:
- **One level presentation**: Tables and graphs presenting data for each of the four levels from resource allocation, through access to/ use of services and outcome to end goals.
- **Two level presentation**: Tables and graphs presenting the relationship between two levels. Data presented are those reported in 2003 (World Bank, 2003) unless otherwise specified. Since we combine tables and line diagrams, we label all tables, bar-charts, diagrams and graphs as figures.

## 5.3. The monitoring steps for the health sector

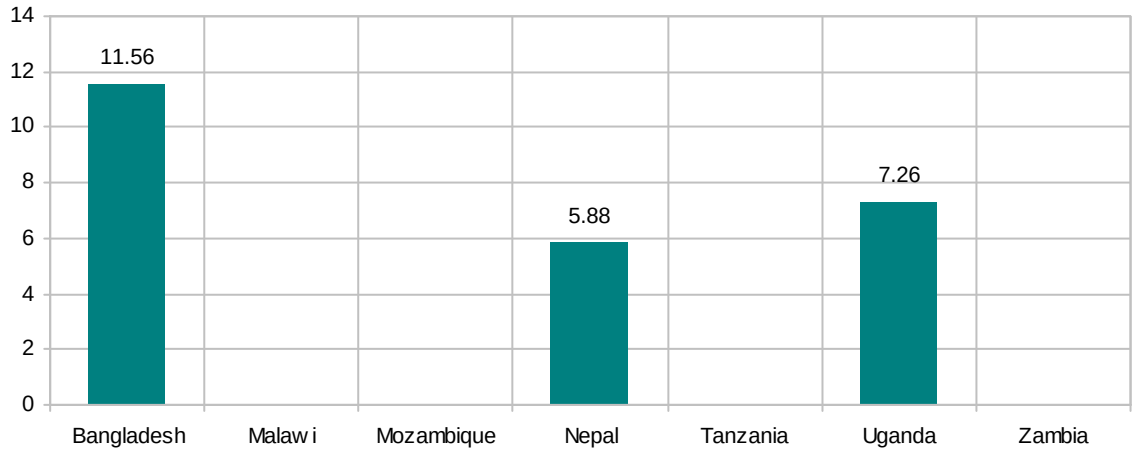
### 5.3.1. Sector & internal sector allocation




For the first monitoring step, we are presenting two indicators as follows:

- Public health expenditures as percent of government expenditures. This indicator shows the commitment of the government to the health sector. One unfortunate problem is that public health expenditures include both recurrent costs and investment, while government consumption expenditures does not. Hence if investment and recurrent costs are equal you get an *artificially doubled level* for these percentages. We have tried to work around this by presenting health expenditures (recurrent costs and investment) in per cent of government expenditures (recurrent costs and investment). Unfortunately data are only available for three of the seven countries and only in one case, Nepal, for more than a few years.
- Health expenditure per capita in PPP$. The *previous* indicator does not show the resources allocated and hence is not well designed for comparisons with the output. For that purpose you need an indicator of real resources such as this one expressed in PPP$. It is an indicator of real resource allocation and tells you what to expect of output.

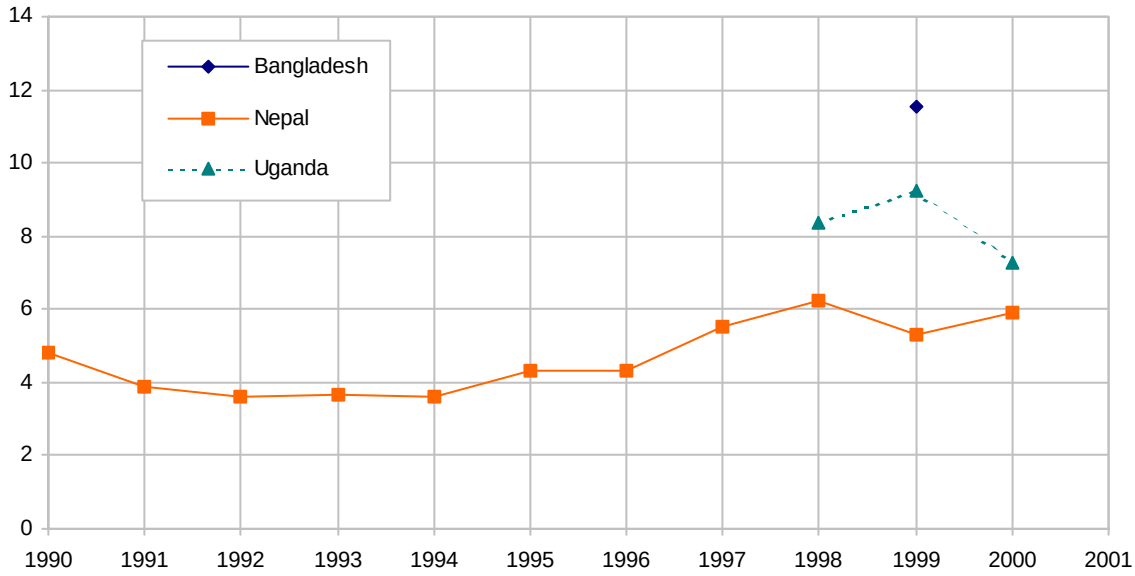
**5.1. Total public health expenditure (recurrent costs & investment) as % of total government expenditures (recurrent costs & investment) [20], latest reported**




[20] Data is presented for the last year available within the period 1990-2001. Figures 5.1 and 5.2 were derived using public health expenditures (% of GDP) and total government expenditures (% of GDP). The data source for this and all the following tables and graphs in this chapter are three, two CD-ROM and one report. The general data source is World Development Indicators 2003 (World Bank 2003a). The data we are presenting are compiled by FAO, IMF, UNESCO and World Bank but presented on this CD-ROM by the World Bank. Some variables are missing here, but present on World Bank Africa Database 2001 (World Bank 2001b). They are then presented only for the five Norwegian partner countries in Africa. Poverty indicators are not well included in those two CD-ROM and hence we have used World Development Report 2003 (World Bank 2003) for both the international indicator referring to one PPP$ a day and for national poverty measures. In has been tempting to include data from national level sources, but in order to maximize consistency and present what is available at the international level, we have resisted that temptation.

**5.2. Total public health expenditure (recurrent costs & investment) as % of government expenditures (recurrent costs & investment), 1990-2001**

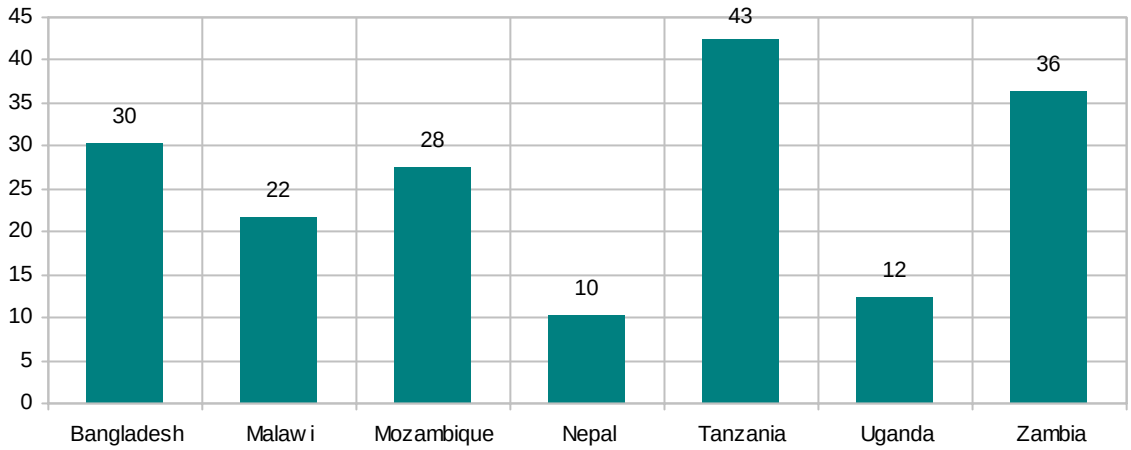
| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | | | | | | | | | | 11.56 | | |
| Malawi | | | | | | | | | | | | |
| Mozambique | | | | | | | | | | | | |
| Nepal | 4.82 | 3.91 | 3.63 | 3.64 | 3.60 | 4.31 | 4.33 | 5.54 | 6.24 | 5.33 | 5.88 | |
| Tanzania | | | | | | | | | | | | |
| Uganda | | | | | | | | | 8.39 | 9.23 | 7.26 | |
| Zambia | | | | | | | | | | | | |




Figures 5.1 and 5.2 show the ideal way to look at health expenditure data using total government expenditures (as defined in Appendix 7). Based on available data, Bangladesh showed the most commitment to the health sector. According to time series data, Nepal showed increasing commitment to the health sector.

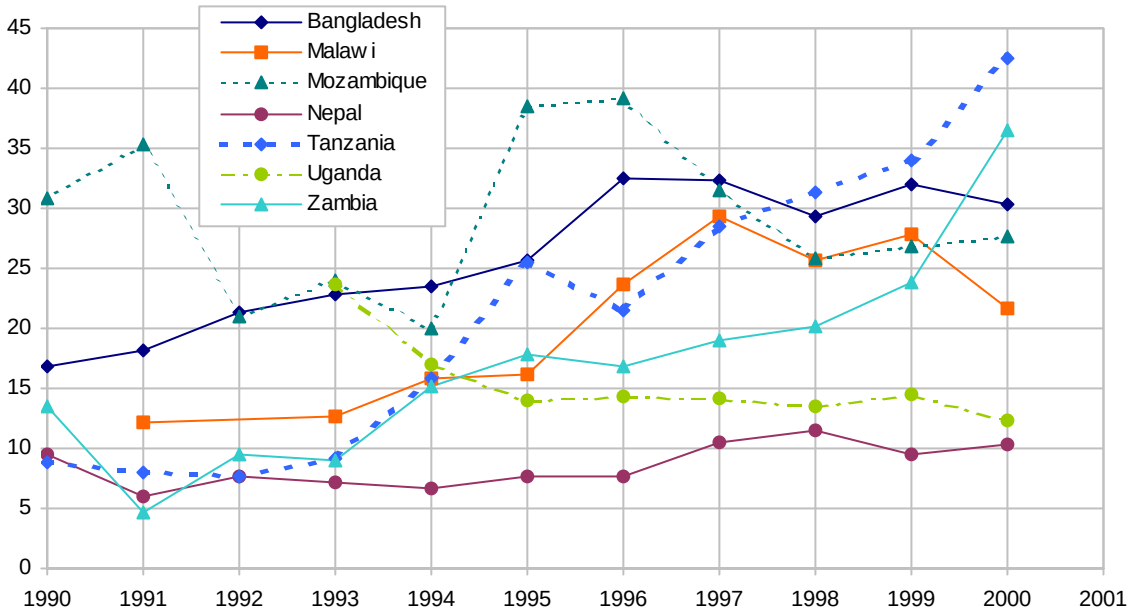
However, by accepting to compare recurrent and investment data for the health sector by recurrent government expenditure we may get data for all countries over a number of years. The results are seen in Figures 5.3 and 5.4.

**5.3. Total public health expenditure (recurrent costs and investment) as % of government recurrent expenditure, latest reported**

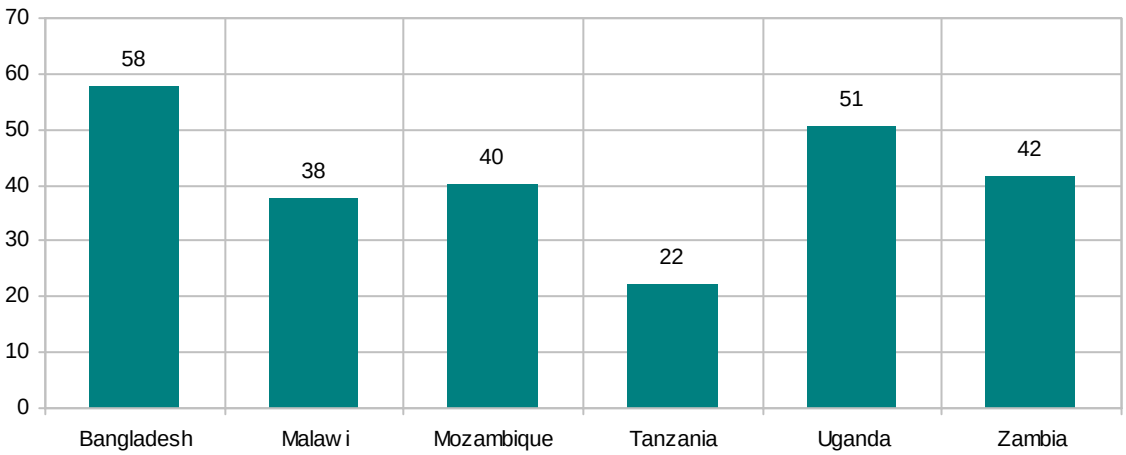


**5.4. Total public health expenditure (recurrent costs and investment) as % of government recurrent expenditure, 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 17 | 18 | 21 | 23 | 24 | 26 | 33 | 32 | 29 | 32 | 30 | .. |
| Malawi | .. | 12 | .. | 13 | 16 | 16 | 24 | 29 | 26 | 28 | 22 | .. |
| Mozambique | 31 | 35 | 21 | 24 | 20 | 38 | 39 | 32 | 26 | 27 | 28 | .. |
| Nepal | 10 | 6 | 8 | 7 | 7 | 8 | 8 | 10 | 12 | 10 | 10 | .. |
| Tanzania | 9 | 8 | 8 | 9 | 16 | 25 | 22 | 28 | 31 | 34 | 43 | .. |
| Uganda | .. | .. | .. | 24 | 17 | 14 | 14 | 14 | 13 | 15 | 12 | .. |
| Zambia | 14 | 5 | 10 | 9 | 15 | 18 | 17 | 19 | 20 | 24 | 36 | .. |

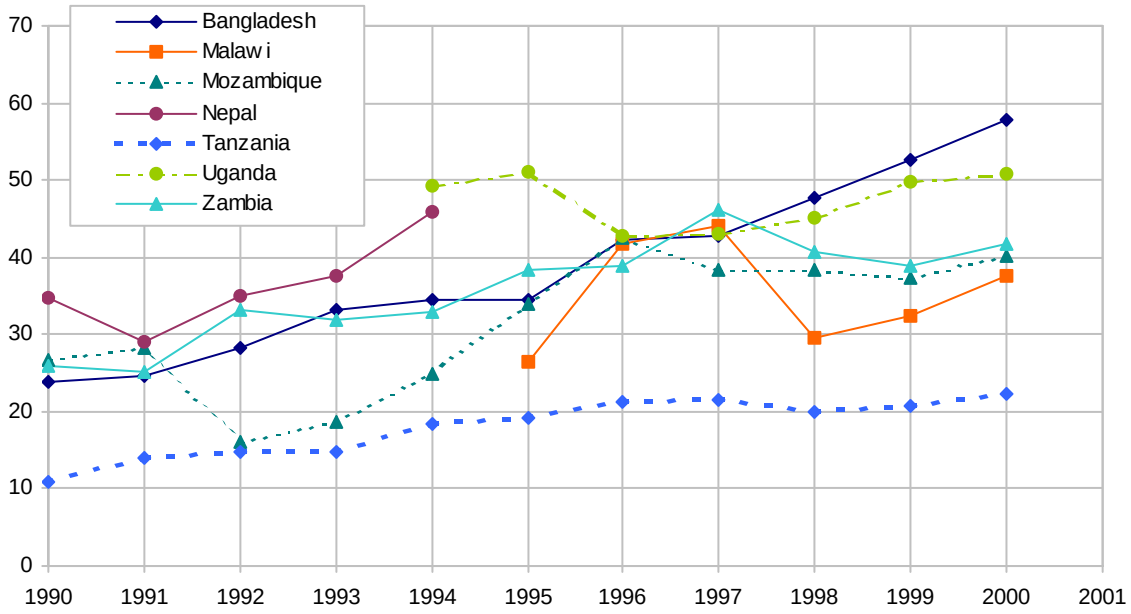



**5.5. Total public health expenditure per capita, PPP (current international $), latest reported**



**5.6. Total public health expenditure per capita, PPP (current international $) 1990-2001**

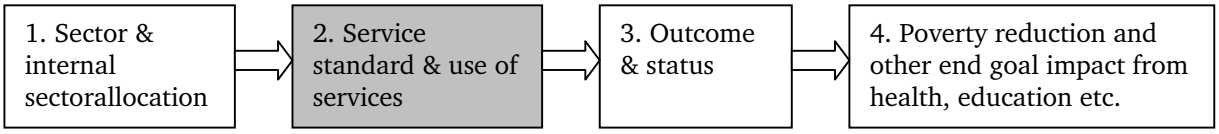
| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 24 | 25 | 28 | 33 | 35 | 35 | 42 | 43 | 48 | 53 | 58 | .. |
| Malawi | .. | .. | .. | .. | .. | 26 | 42 | 44 | 29 | 32 | 38 | .. |
| Mozambique | 27 | 28 | 16 | 19 | 25 | 34 | 43 | 39 | 38 | 37 | 40 | .. |
| Nepal | 35 | 29 | 35 | 38 | 46 | .. | .. | .. | .. | .. | .. | .. |
| Tanzania | 11 | 14 | 15 | 15 | 18 | 19 | 21 | 21 | 20 | 21 | 22 | .. |
| Uganda | .. | .. | .. | .. | 49 | 51 | 43 | 43 | 45 | 50 | 51 | .. |
| Zambia | 26 | 25 | 33 | 32 | 33 | 38 | 39 | 46 | 41 | 39 | 42 | .. |




According to the latest figures available in 2003, i.e. from 2000, Tanzania, Zambia and Bangladesh showed a strong commitment to the health sector (see 5.3). The governments of Tanzania and Zambia were exemplary in their commitment to the health sector, with 43 and 36 % respectively. Time series data showed that health expenditures fluctuated for most countries specially Mozambique. 5.4 showed Nepal's and Zambia's increasing commitment to the health sector while Uganda showed the opposite pattern.

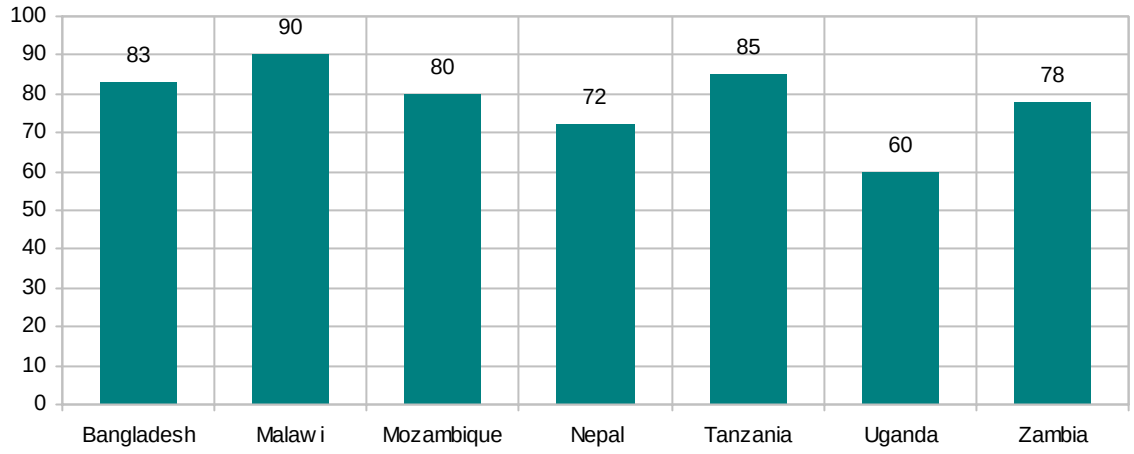
Even if the percentage ratio of total public health expenditures per capita (see 5.3) is highest in Tanzania, according to the data available in 2003 it still had the lowest average health expenditure per capita, at 22 PPP$ (see 5.5). Bangladesh and Uganda are the top two in level of health resources used for each citizen. Country trend data show that resources for the health sector per capita generally increased over time, with Mozambique and Malawi showing quite large variations (5.6). Differences in data published in 2000 and 2003 data and data gaps have been noted.

### 5.3.2. Service standard & use of services



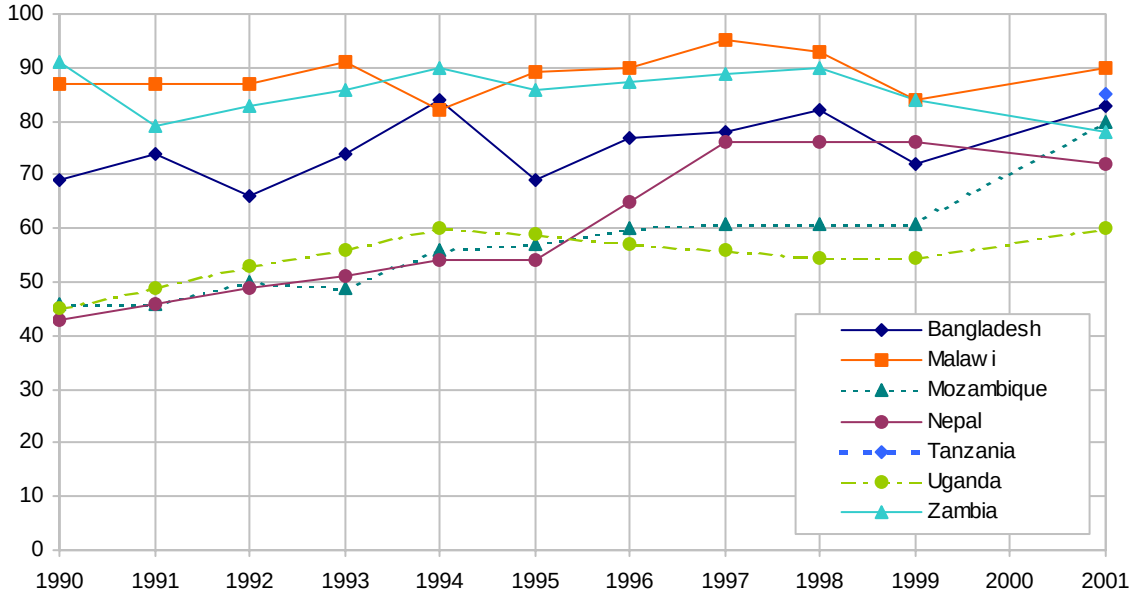

We have chosen DPT vaccination as an indicator for health service standard and use of services. Vaccination is a high priority area of preventive health and at the same time data are available on a regular basis.

**5.7. Immunisation, DPT (% of children under 12 months), latest reported**



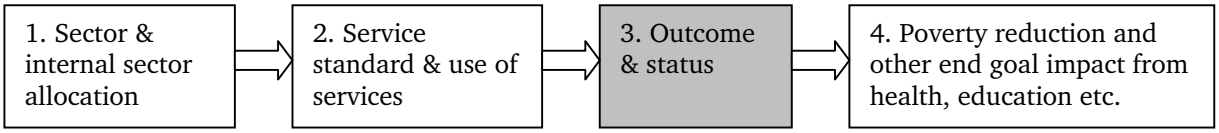

**5.8. Immunisation, DPT (% of children under 12 months), 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 69 | 74 | 66 | 74 | 84 | 69 | 77 | 78 | 82 | 72 | .. | 83 |
| Malawi | 87 | 87 | 87 | 91 | 82 | 89 | 90 | 95 | 93 | 84 | .. | 90 |
| Mozambique | 46 | 46 | 50 | 49 | 56 | 57 | 60 | 61 | 61 | 61 | .. | 80 |
| Nepal | 43 | 46 | 49 | 51 | 54 | 54 | 65 | 76 | 76 | 76 | .. | 72 |
| Tanzania | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 85 |
| Uganda | 45 | 49 | 53 | 56 | 60 | 59 | 57 | 56 | 54,5 | 54,5 | .. | 60 |
| Zambia | 91 | 79 | 83 | 86 | 90 | 86 | 87,33 | 88,67 | 90 | 83,9 | .. | 78 |




The immunisation coverage shows a development towards equality not by moving towards an average, but the very best development by slow and steady or even fast improvements in countries with a low coverage in the 1990s. The main problem seems now to be moving from good coverage to excellent. Even many countries which had trouble to ensure a sustained high coverage and hence falling rates at the turn of the century, have now managed to increase the rates, such as Malawi, Bangladesh, Mozambique. Even in Uganda where reduced donor support and extended decentralization caused an extra challenge, the coverage is finally on the increase again. But the Ugandans still have quite a job to do. Unfortunately the coverage is pointing downwards in Zambia, while Nepal had a drop in the rate from 1999 to 2001.

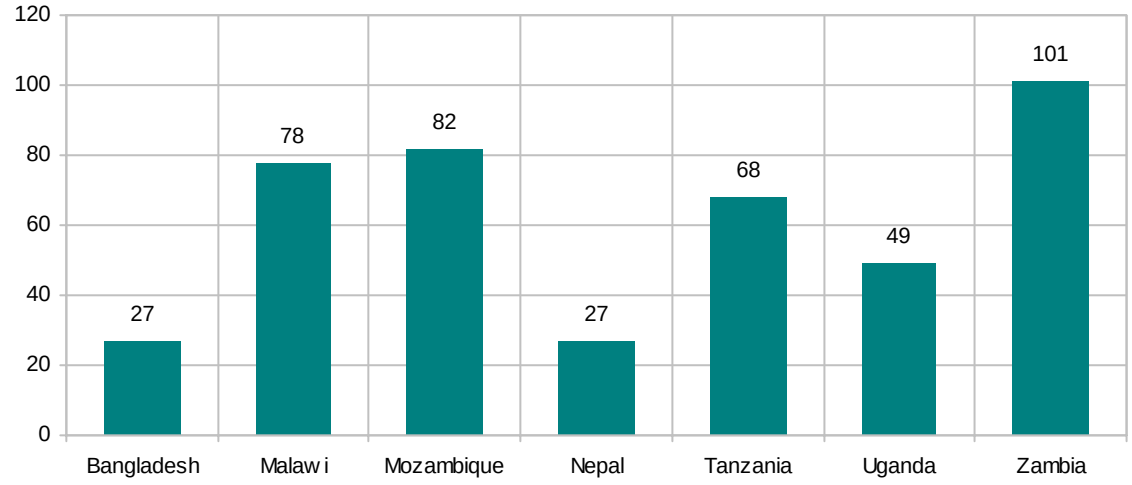
### 5.3.3. Sector outcome and status




We have chosen to present mortality as the indicator for outcome and sector status. The usual recorded data for outcome is infant mortality (below one year old) or child mortality (0-59 months). However infant mortality rate does not reflect the effect of vaccination.

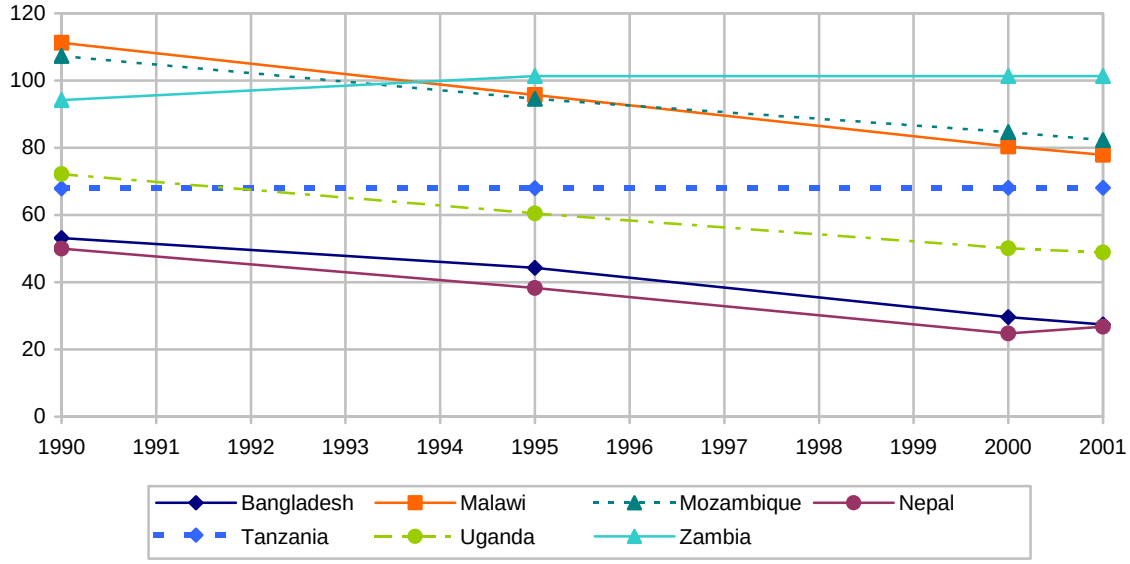
This report aims to follow the effects of invested resources in the health sector, thus we focused upon mortality for children excluding the infants, i.e. from passing one year to reaching five years.

**5.9. Mortality rate, 12-59 months (per 1 000 1-year old children), latest reported**



**5.10. Mortality rate, 12-59 months (per 1 000 1-year old children) 1990-2001.**

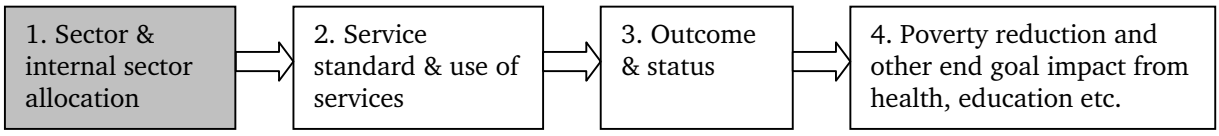
| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 53 | .. | .. | .. | .. | 44 | .. | .. | .. | .. | 30 | 27 |
| Malawi | 111 | .. | .. | .. | .. | 96 | .. | .. | .. | .. | 80 | 78 |
| Mozambique | 107 | .. | .. | .. | .. | 95 | .. | .. | .. | .. | 85 | 82 |
| Nepal | 50 | .. | .. | .. | .. | 38 | .. | .. | .. | .. | 25 | 27 |
| Tanzania | 68 | .. | .. | .. | .. | 68 | .. | .. | .. | .. | 68 | 68 |
| Uganda | 72 | .. | .. | .. | .. | 60 | .. | .. | .. | .. | 50 | 49 |
| Zambia | 94 | .. | .. | .. | .. | 101 | .. | .. | .. | .. | 101 | 101 |




The latest mortality rate figures (see figure 5.9) show that Zambia had the highest rate. In almost all countries except Tanzania and Zambia, there is a general steady decline in mortality of children aged 1 to 5 years from 1990 to 2001 (figure 5.10). Morality rates for children vary considerable between the Asian and the African countries listed. There can be several hypotheses regarding the difference between Asia and Africa and one of the most probable is the impact of HIV/AIDS.

## 5.4. The monitoring steps for the education sector

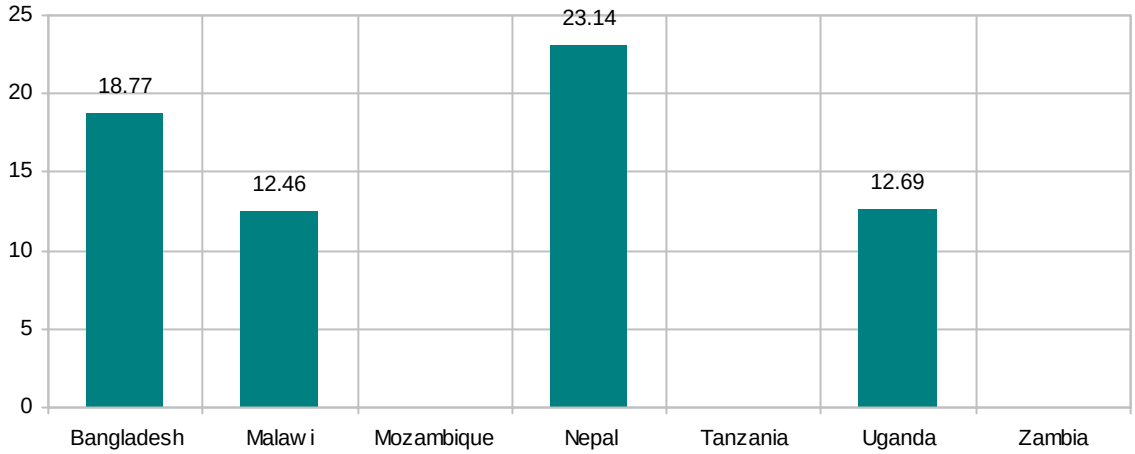
### 5.4.1. Sector & internal sector allocation




For the education sector we are presenting two indicators, as follows:

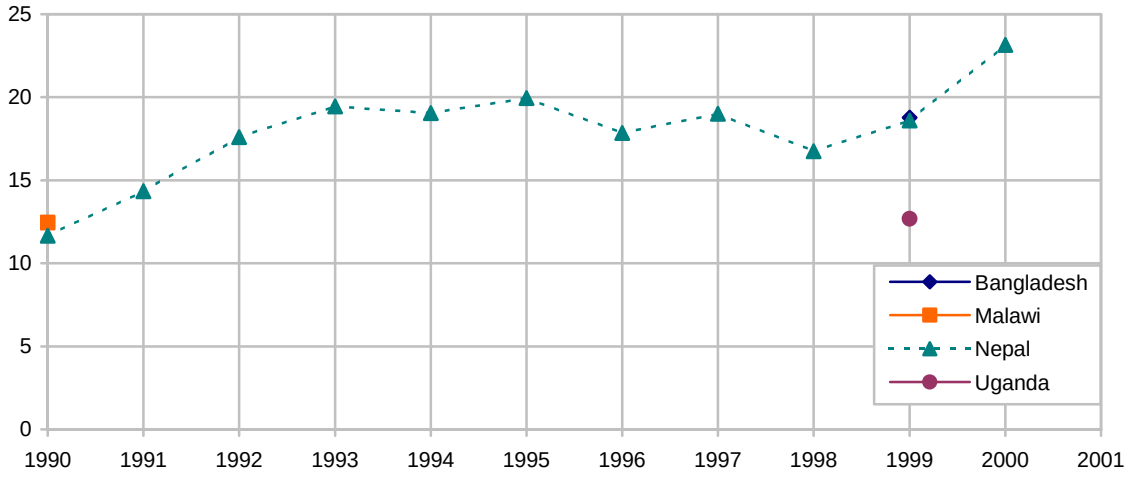
- Public education expenditures as percent of government consumption expenditures. This indicator shows the commitment of government. Similar to the health sector, there is unfortunately the problem that public education expenditures include both recurrent costs and investment, while government consumption expenditures do not. Hence if investment and recurrent costs are equal you get an *artificially doubled level* for these percentages. Thus total education expenditures as percent of government recurrent expenditures is presented.
- Education expenditure per capita in PPP$. The previous indicator does not show the resources allocated and hence is not well designed for comparisons with the output. For that purpose you need an indicator of real resources, such as this one. It is an indicator of real resource allocation and tells you what to expect of output.

**5.11. Total public education expenditures (recurrent costs & investment) as % of total government expenditures (recurrent costs & investment)[21], latest reported**




**5.12. Total public education expenditures (recurrent costs & investment) as % of total government expenditures (recurrent costs & investment), 1990-2001**

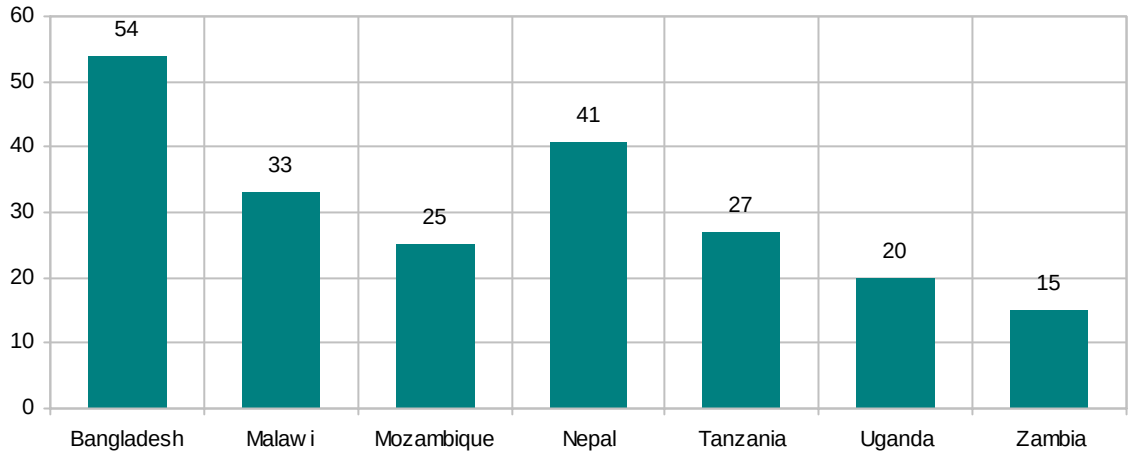
| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | | | | | | | | | | 18,77 | | |
| Malawi | 12,46 | | | | | | | | | | | |
| Mozambique | | | | | | | | | | | | |
| Nepal | 11,67 | 14,34 | 17,60 | 19,45 | 19,04 | 19,96 | 17,85 | 19,01 | 16,75 | 18,60 | 23,14 | |
| Tanzania | | | | | | | | | | | | |
| Uganda | | | | | | | | | | 12,69 | | |
| Zambia | | | | | | | | | | | | |




Based on the latest available data we see Nepal and Bangladesh's commitment to the education sector (figure 5.11). However there is lack of data for total government expenditures thus it was decided to compare total public education expenditures with just government recurrent expenditures in order to learn about the commitment in the other countries. The results are seen in figures 5.13 and 5.14.

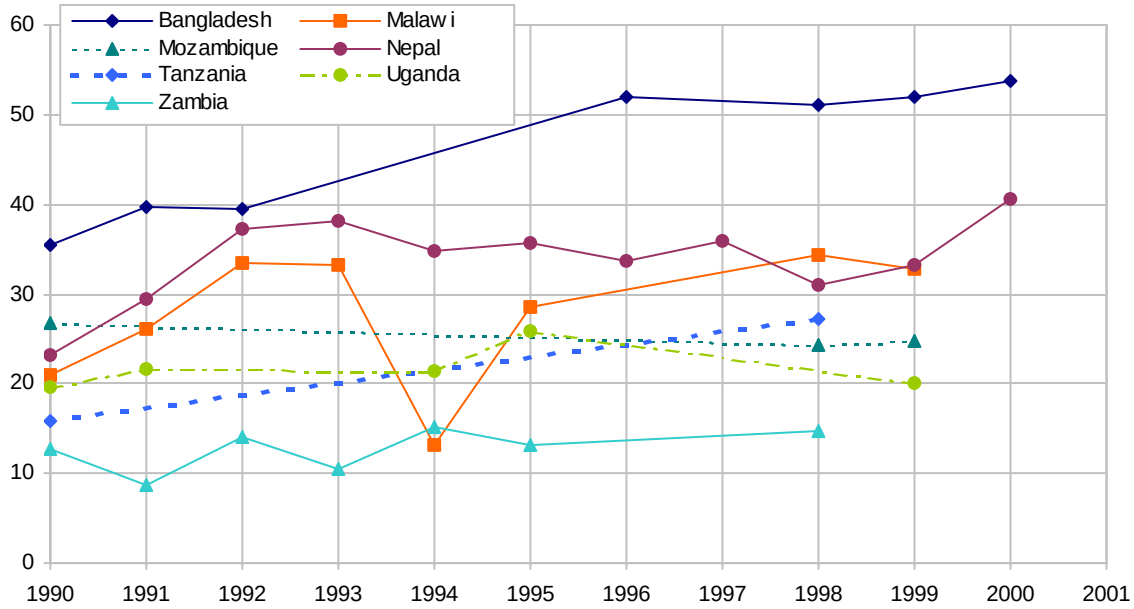
[21] Figures c and d were derived by using total public spending on education (% of GDP) and total government spending % og GDP).

**5.13. Total public education expenditures as % of government recurrent expenditures, latest reported**

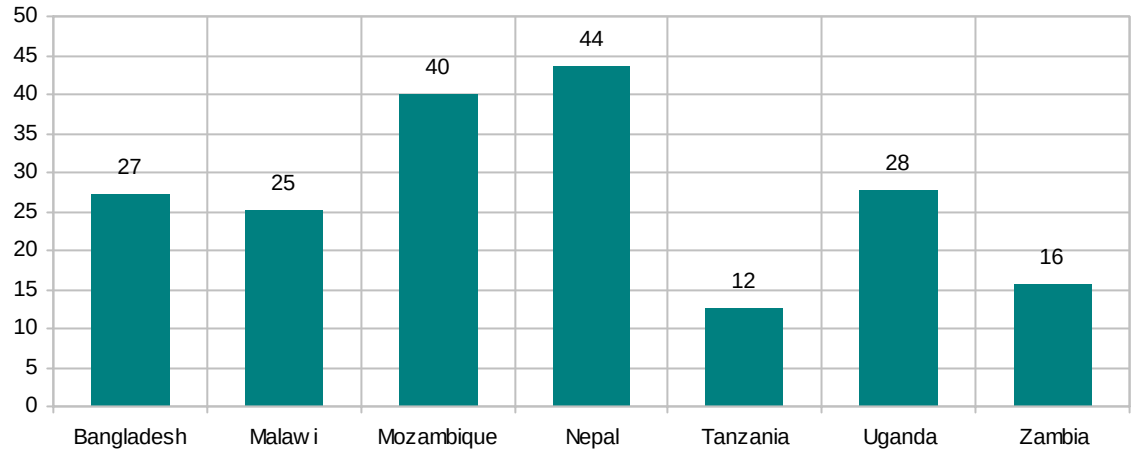



**5.14. Total public education expenditures as % of government recurrent expenditures, 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 35 | 40 | 40 | .. | .. | .. | 52 | .. | 51 | 52 | 54 | .. |
| Malawi | 21 | 26 | 34 | 33 | 13 | 29 | .. | .. | 34 | 33 | .. | .. |
| Mozambique | 27 | .. | .. | .. | .. | .. | .. | .. | 24 | 25 | .. | .. |
| Nepal | 23 | 29 | 37 | 38 | 35 | 36 | 34 | 36 | 31 | 33 | 41 | |
| Tanzania | 16 | .. | .. | .. | .. | .. | .. | .. | 27 | .. | .. | .. |
| Uganda | 20 | 22 | .. | .. | 21 | 26 | .. | .. | .. | 20 | .. | .. |
| Zambia | 13 | 9 | 14 | 11 | 15 | 13 | .. | .. | 15 | .. | .. | .. |

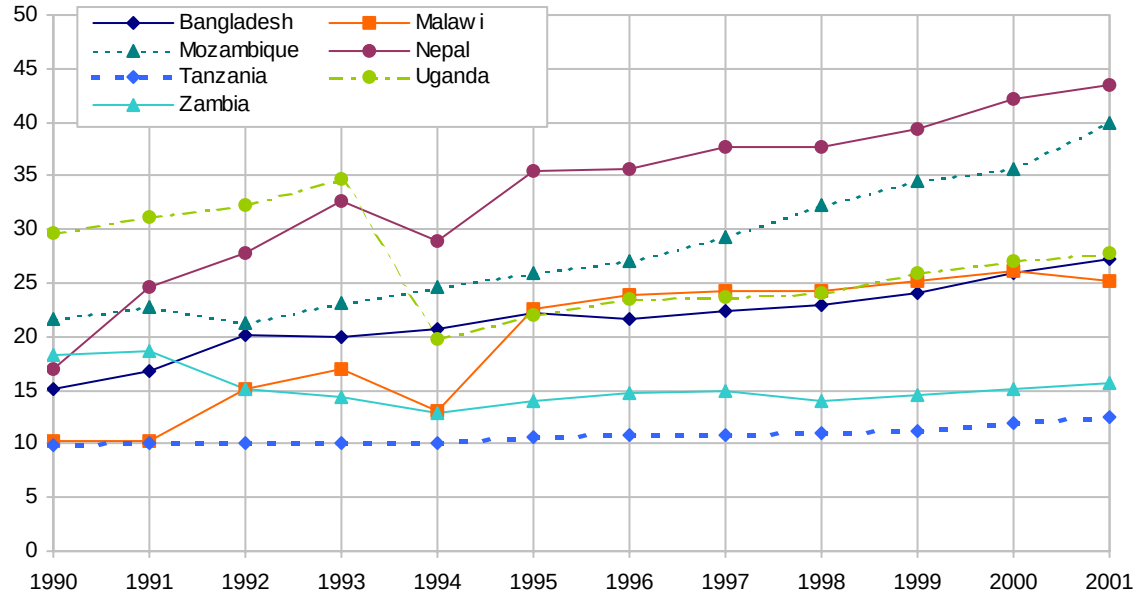


**5.15. Education expenditure per capita, PPP (current international $), latest reported**



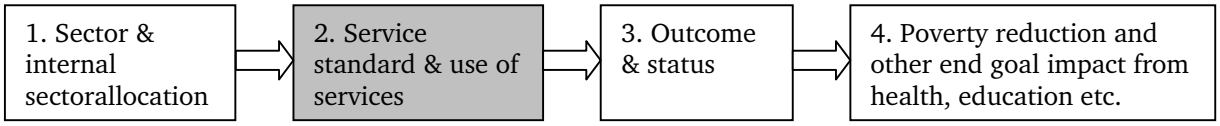

**5.16. Education expenditure per capita, PPP (current international $), 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 15 | 17 | 20 | 20 | 21 | 22 | 22 | 22 | 23 | 24 | 26 | 27 |
| Malawi | 10 | 10 | 15 | 17 | 13 | 23 | 24 | 24 | 24 | 25 | 26 | 25 |
| Mozambique | 22 | 23 | 21 | 23 | 25 | 26 | 27 | 29 | 32 | 35 | 36 | 40 |
| Nepal | 17 | 25 | 28 | 33 | 29 | 36 | 36 | 38 | 38 | 39 | 42 | 44 |
| Tanzania | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 | 12 | 12 |
| Uganda | 30 | 31 | 32 | 35 | 20 | 22 | 24 | 24 | 24 | 26 | 27 | 28 |
| Zambia | 18 | 19 | 15 | 14 | 13 | 14 | 15 | 15 | 14 | 14 | 15 | 16 |

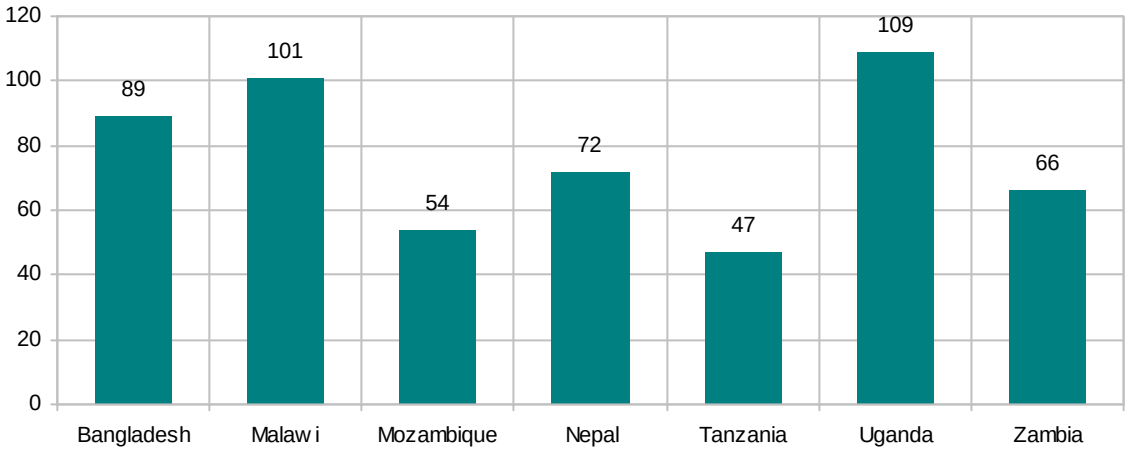



For the education sector Asian countries top the list of government commitments for social sector resource allocation as published in 2003 (figure 5.13). Zambia has the lowest commitment for education. At the same time it is interesting to note that Zambia belonged to the top three countries concerning spending in its public health budget. So in this case, it is more a matter of special priorities within the social sectors than a general low priority for all social sectors. Data from 1990-2001 showed a general increase in total public education expenditures from the 1990 levels except for Uganda and Mozambique (figure 5.14). Bangladesh invested strongly in education, and Malawi increased its budget from 13 to 29% from 1994 to 1995. On a per capita basis, with the exception of Malawi, which had a drastic drop in expenditure from 1993 to 1994, the general trend is a slow but not necessarily a steady increase in public expenditures for the education sector (figure 5.16). Only Tanzania and Zambia did not increase neither shares of government budget nor amount per capita.

### 5.4.2. Service standard & use of services

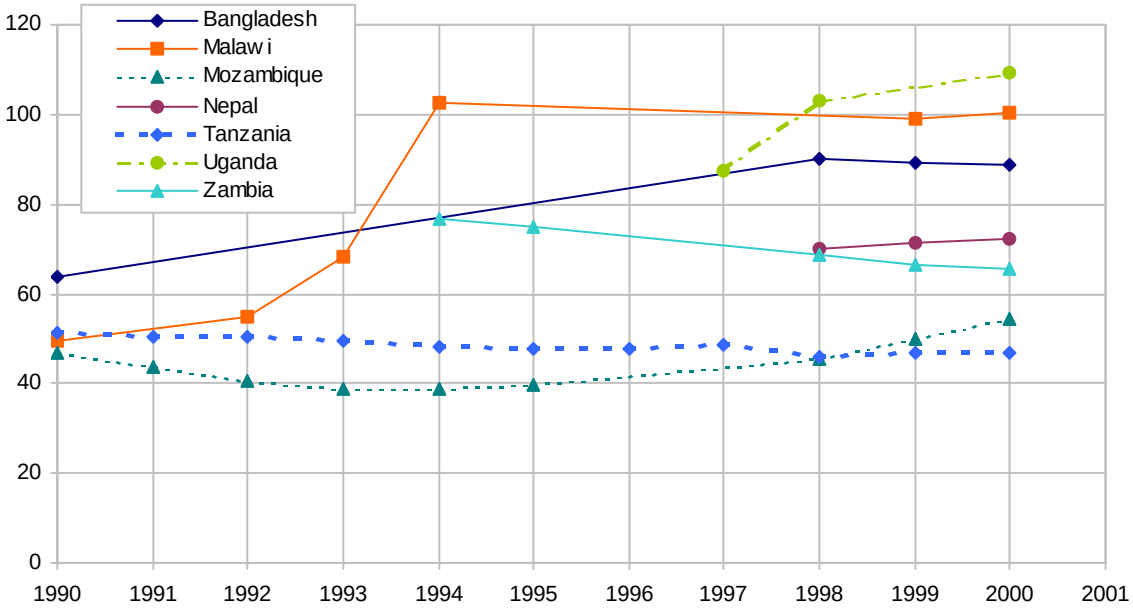



**5.17. School enrolment, primary (% net), latest reported**




**5.18. School enrolment, primary (% net), 1990 - 2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 64 | .. | .. | .. | .. | .. | .. | .. | 90 | 89 | 89 | .. |
| Malawi | 50 | .. | 55 | 68 | 103 | .. | .. | .. | .. | 99 | 101 | .. |
| Mozambique | 47 | 44 | 41 | 39 | 39 | 40 | .. | .. | 46 | 50 | 54 | .. |
| Nepal | .. | .. | .. | .. | .. | .. | .. | .. | 70 | 71 | 72 | .. |
| Tanzania | 51 | 51 | 50 | 49 | 48 | 48 | 48 | 48 | 46 | 47 | 47 | .. |
| Uganda | .. | .. | .. | .. | .. | .. | .. | 87 | 103 | .. | 109 | .. |
| Zambia | .. | .. | .. | .. | 77 | 75 | .. | .. | 69 | 66 | 66 | .. |

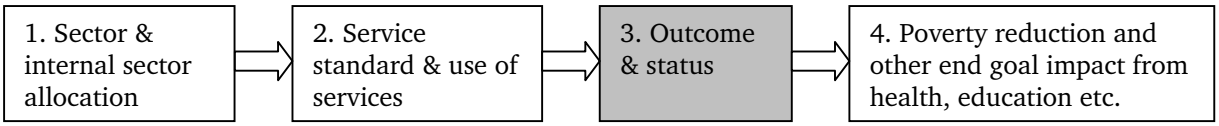



For the education sector, school enrolment is not only an indicator but also the most important part of service provision in education. We have chosen net enrolment as the indicator even if there are some data gaps[22].

[22] Net enrollment tells the proportion of children at school age really enrolled in school and varies by definition from 0 to 100 per cent, but since some pupils will hide their real age, children of over-age might well be included. This might press the indicator above 100, clearly an indicator of low quality.

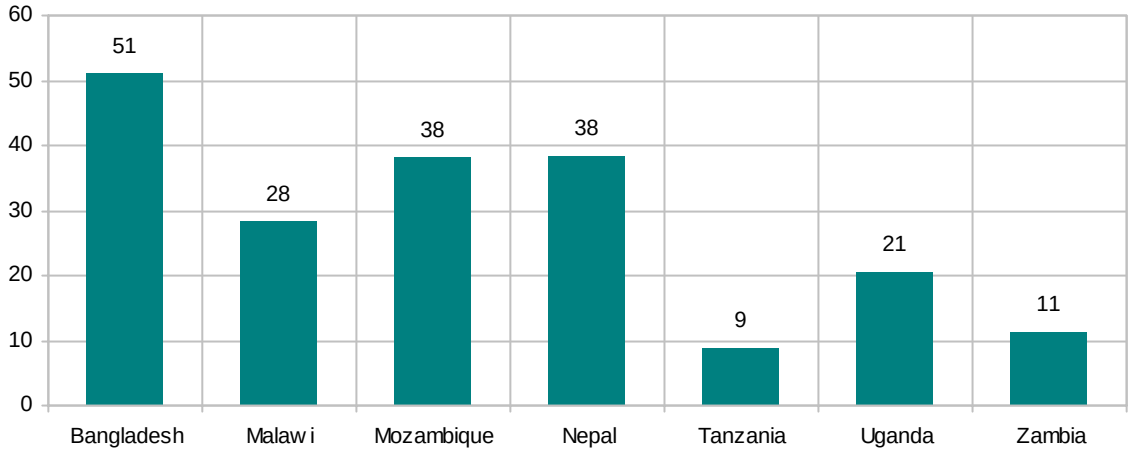
In the primary level, the latest net enrolment data can be grouped into two groups i.e. low and high enrolment level. One group with lower enrolment ranging from 47 to 72% for Tanzania, Mozambique, Zambia and Nepal (in increasing percentages) and the second group from 89 to 109 (Bangladesh, Malawi and Uganda), see figure 5.17. Based on available data for the period 1990-2000, we can see some interesting results for the trend data (figure 5.18). There has been a general increase in enrolment except for Zambia and Tanzania, with a faster drop seen for Zambia. Malawi had a drastic increase in enrolment from 1993 to 1994 (most probably due to a new school policy by the new government abolishing school fees). Uganda's enrolment increased from 87% to 103 % from 1997 to 1998 and increased further to 109% in 2000

### 5.4.3. Sector outcome and status



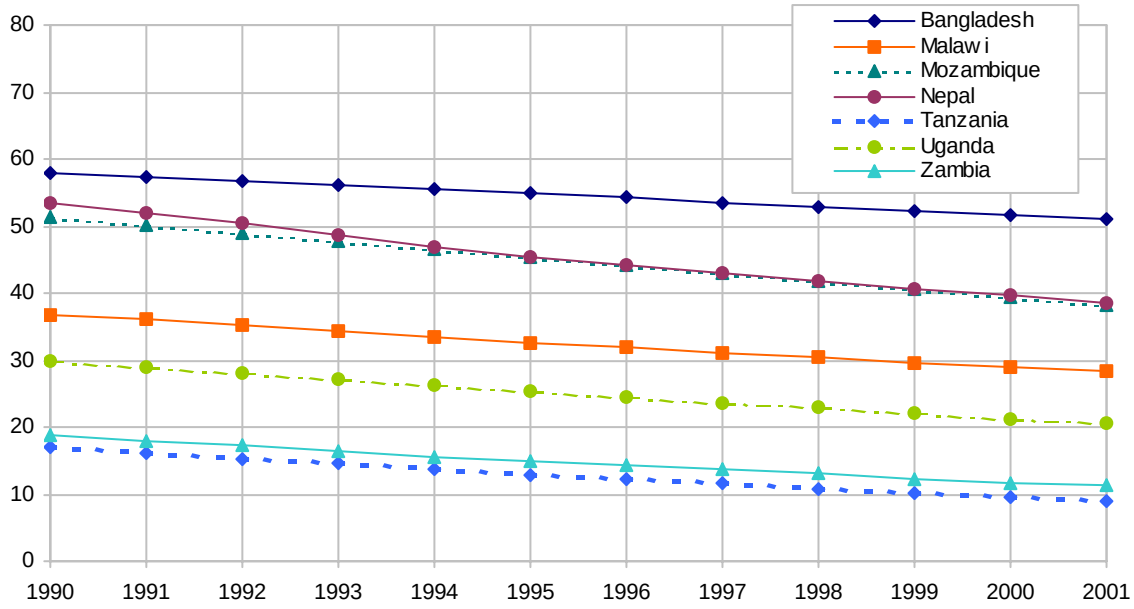

The main impact of school enrolment is a long-term reduction in illiteracy. Hence we have chosen that as the overall indicator.

**5.19. Illiteracy rate, youth total (% of people ages 15-24), latest reported**



**5.20. Illiteracy rate, youth total (% of people ages 15-24), 1990-2001**

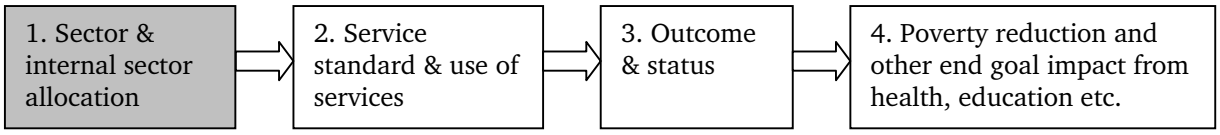
| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 58 | 57 | 57 | 56 | 56 | 55 | 54 | 54 | 53 | 52 | 52 | 51 |
| Malawi | 37 | 36 | 35 | 34 | 33 | 33 | 32 | 31 | 30 | 30 | 29 | 28 |
| Mozambique | 51 | 50 | 49 | 48 | 46 | 45 | 44 | 43 | 42 | 41 | 39 | 38 |
| Nepal | 53 | 52 | 50 | 49 | 47 | 45 | 44 | 43 | 42 | 41 | 40 | 38 |
| Tanzania | 17 | 16 | 15 | 14 | 14 | 13 | 12 | 12 | 11 | 10 | 9 | 9 |
| Uganda | 30 | 29 | 28 | 27 | 26 | 25 | 25 | 24 | 23 | 22 | 21 | 21 |
| Zambia | 19 | 18 | 17 | 16 | 16 | 15 | 14 | 14 | 13 | 12 | 12 | 11 |




Figures 5.19 and 5.20 show that Bangladesh, Mozambique and Nepal recorded the highest illiteracy among the 15-24 years old young men and women which was surprising since they had the highest resource allocation since 1990. Amongst African countries, Mozambique and Malawi had the highest illiteracy rate and also the highest resource allocation (except for the years between 1993 and 1995 for Malawi). For all countries there is a steady decline in illiteracy since 1990. In fact the slowest reduction is for Bangladesh with the highest resource allocation and a fair enrolment. These data does not show how the resource is used but it can be an interesting study of this phenomenon for the four countries mentioned, Bangladesh, Nepal, Mozambique and Malawi.

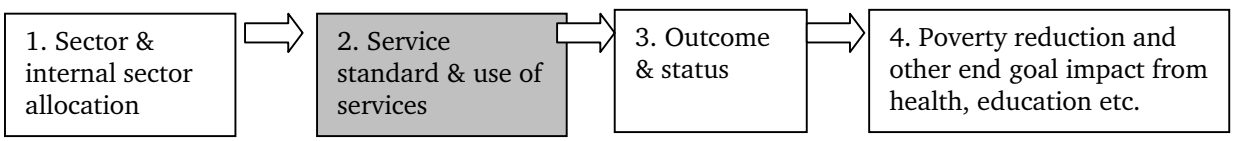
## 5.5. The monitoring steps for the water and sanitation sector

### 5.5.1. Sector & internal sector allocation



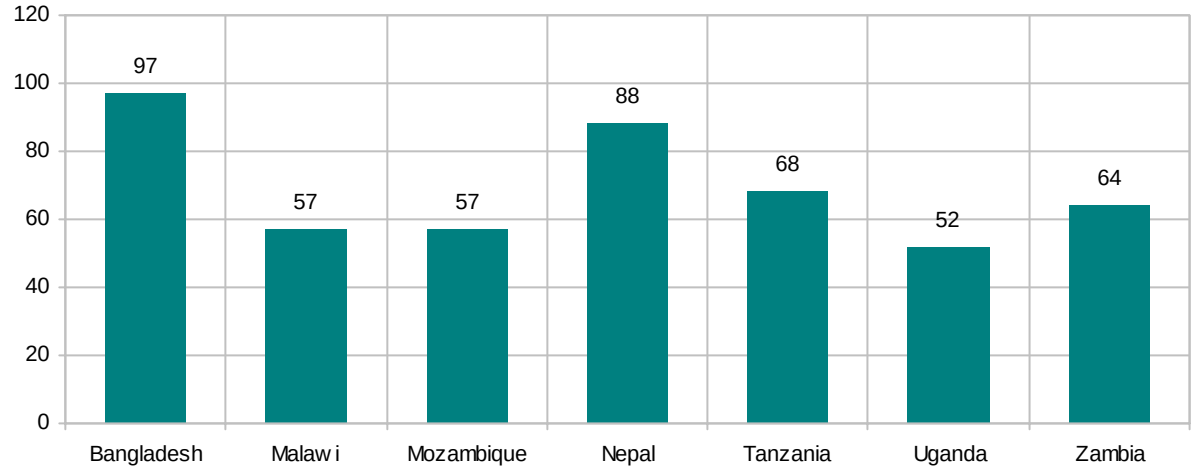

There is no international level data available on resources allocated to the water and sanitation sector.

### 5.5.2. Service standard & use of services



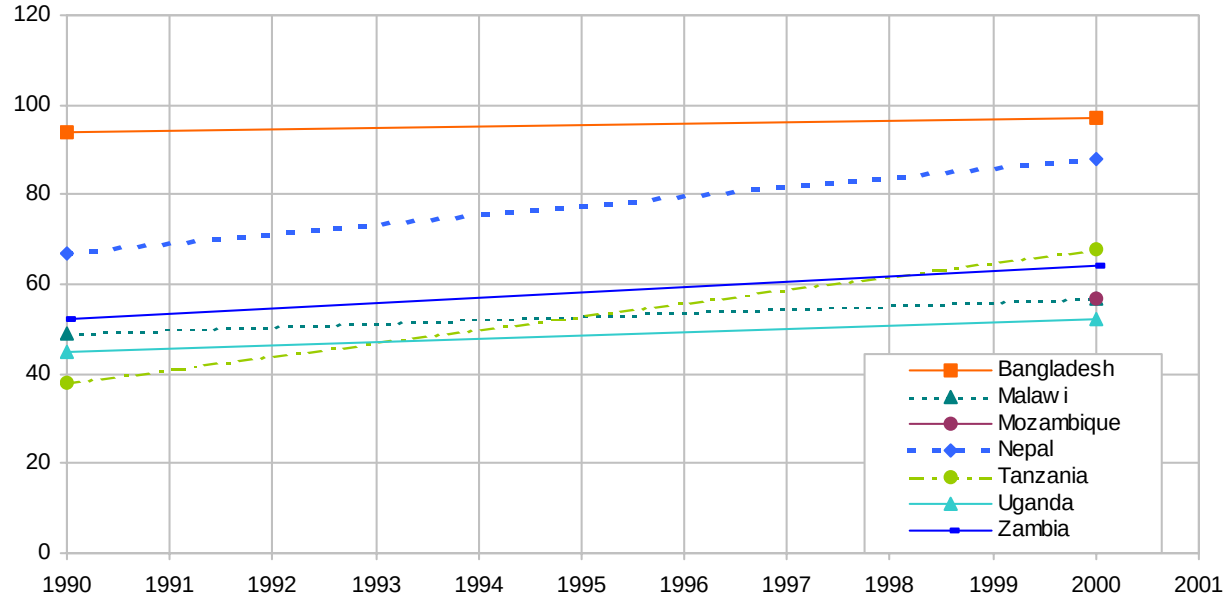
Millenium development goals recommends population with access to improved water source and access to improved sanitation or safe water and sanitation. In reality there is no difference in statistics gathered for the terms "improved and safe". There are few administrative statistics on access to clean water thus the data gaps for water and sanitation indicators.

**5.21. Percentage of population with access to safe water, latest reported**

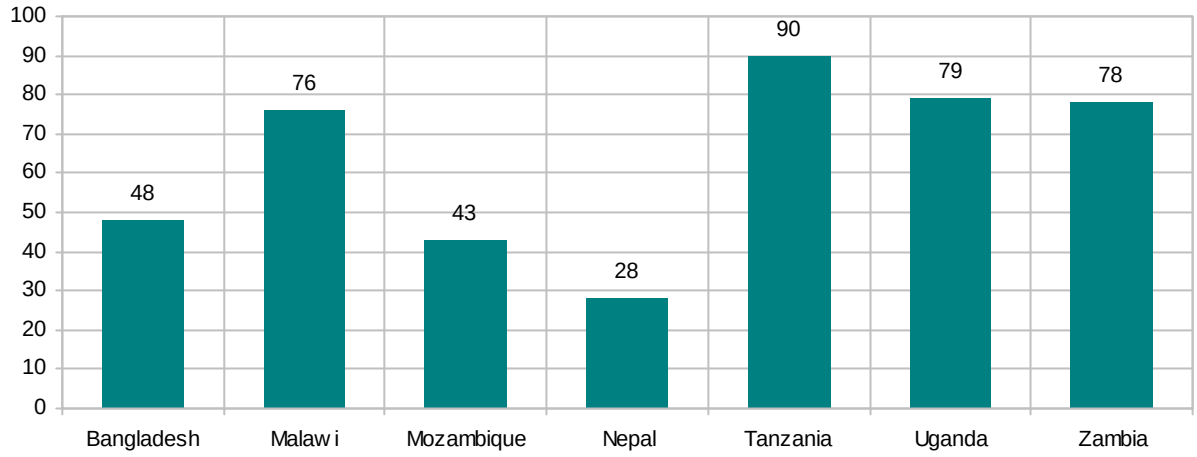



**5.22. Percentage of population with access to safe water, 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 94 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 97 | .. |
| Malawi | 49 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 57 | .. |
| Mozambique | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 57 | .. |
| Nepal | 67 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 88 | .. |
| Tanzania | 38 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 68 | .. |
| Uganda | 45 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 52 | .. |
| Zambia | 52 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 64 | .. |



**5.23. Percentage of population with access to sanitation, latest reported**

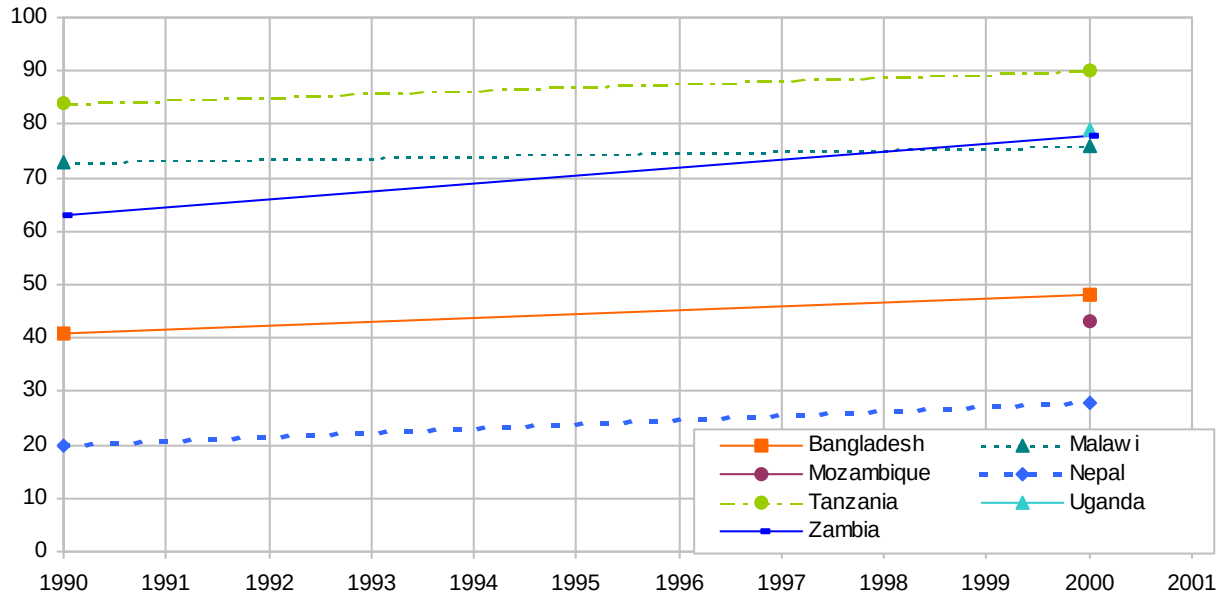



The figures on access to safer water (figures 5.21 - 5.24) show a mixed picture across the continents. Amongst Norwegian partner countries, more Asians had access to safe water compared to Africans.

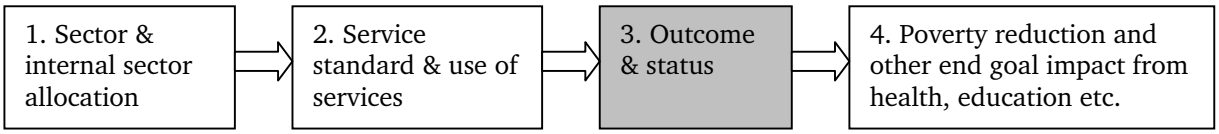
However more citizens from Tanzania, Uganda and Zambia and Malawi had access to safe sanitation than Bangladesh and Nepal.

**5.24. Percentage of population with access to sanitation, 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 41 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 48 | .. |
| Malawi | 73 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 76 | .. |
| Mozambique | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 43 | .. |
| Nepal | 20 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 28 | .. |
| Tanzania | 84 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 90 | .. |
| Uganda | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 79 | .. |
| Zambia | 63 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 78 | .. |



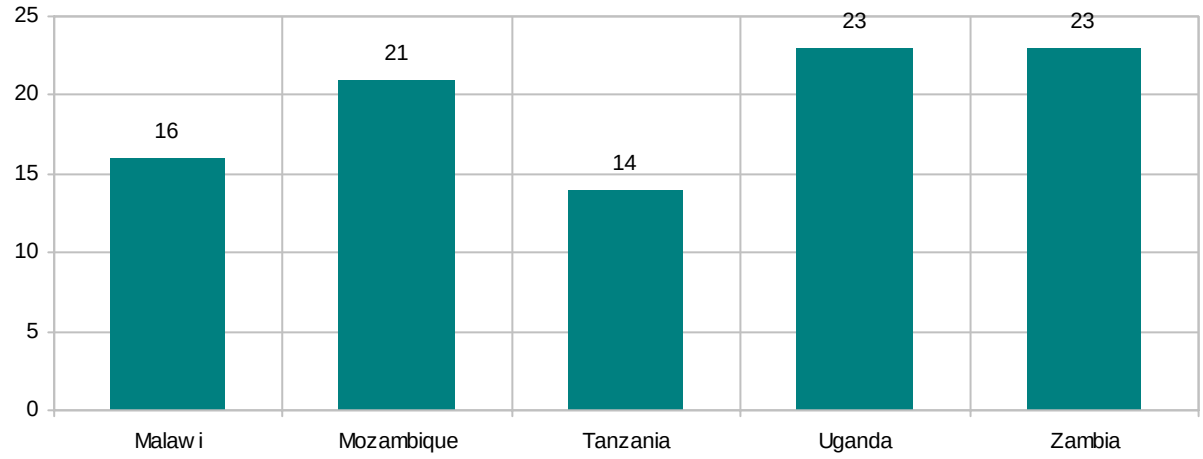
### 5.5.3. Sector outcome and status




For the water and sanitation service, we expect the main outcome in the health sector as improved health and especially by avoiding diarrhoea.

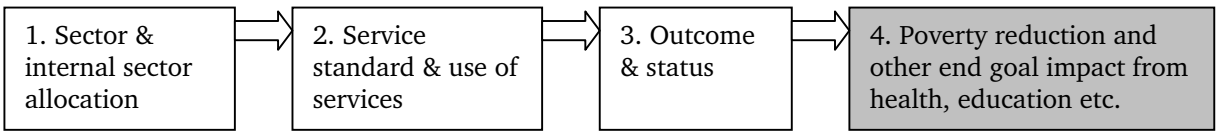
For diarrhoea, data are only available for Africa. In these countries, as illustrated in 5.25, the figures show a distribution following similar patterns as for safe water and sanitation. Tanzania has the lowest level followed by Malawi.

**5.25. Diarrhoea disease incidence[23], latest reported**




## 5.6. The final monitoring step, end goals, human welfare and poverty reduction

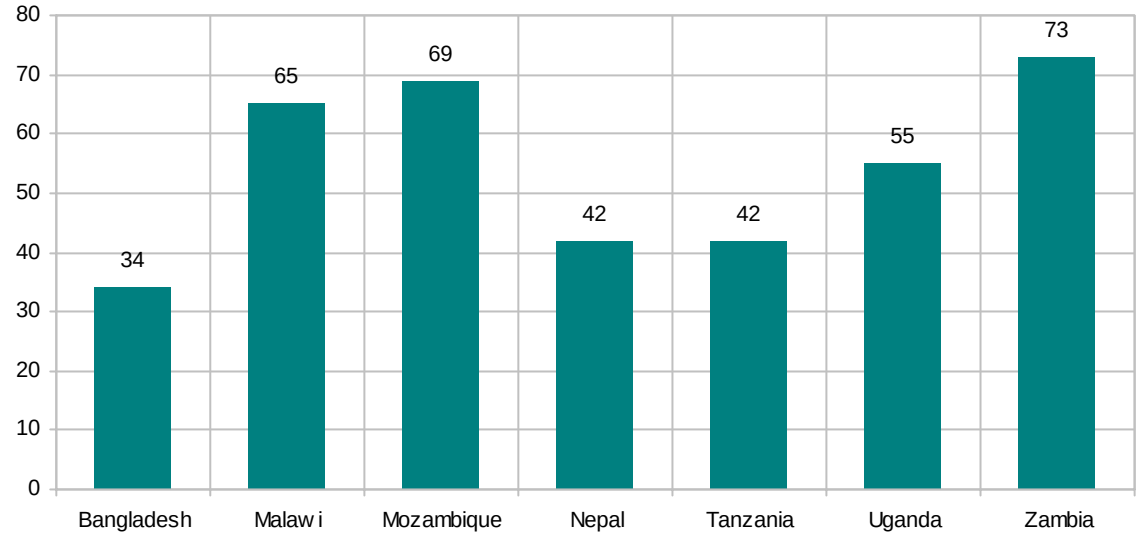
The previous paragraphs have shown that NORAD partner countries prioritised sectors differently. Giving prioritisation to resource allocation to a sector seemingly resulted in output and outcome gain. Before we embark on presenting statistics for two and two monitoring steps jointly, we address the common goals, measured by the poverty indicators.




For this presentation we have selected a standardised poverty indicator i.e. one PPP $ per person per day. For national trends, we have chosen national poverty lines, since more data are available.

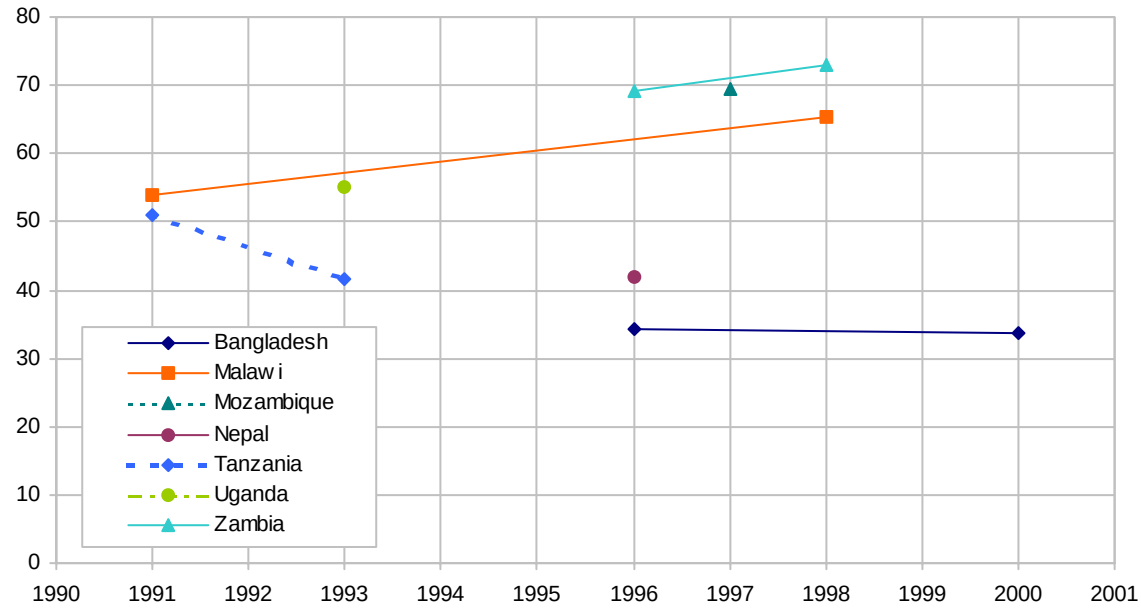
[23] Figures from WDI 2002.

**5.26. Poverty headcount, national (% of population), latest reported**




**5.27. Poverty headcount, national (% of population), 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | .. | .. | .. | .. | .. | .. | 34 | .. | .. | .. | 34 | .. |
| Malawi | .. | 54 | .. | .. | .. | .. | .. | | 65 | .. | .. | .. |
| Mozambique | .. | .. | .. | .. | .. | .. | .. | 69 | .. | .. | .. | .. |
| Nepal | .. | .. | .. | .. | .. | .. | 42 | .. | .. | .. | .. | .. |
| Tanzania | .. | 51 | | 42 | .. | .. | .. | .. | .. | .. | .. | .. |
| Uganda | .. | .. | .. | 55 | .. | .. | .. | .. | .. | .. | .. | .. |
| Zambia | .. | .. | .. | .. | .. | .. | 69 | .. | 73 | .. | .. | .. |



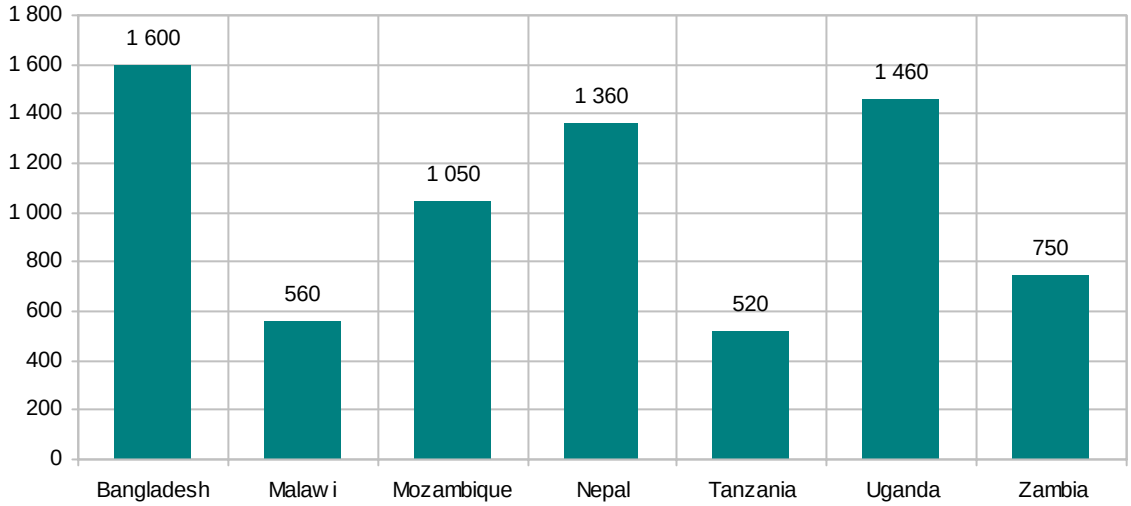

All the seven countries are struggling with high poverty levels. Based on the latest data reported in 2003 WDI, Bangladesh, Nepal and Tanzania are doing better comparatively speaking with 34 to 42 % of the population classified as poor. On the other side, there is Zambia (73%), Mozambique (69%), Malawi (65%) and Uganda (55%) with high percentages of the population classified as poor (figure 5.26). For these seven countries there is not enough data to comment on the trend. However, based on the available data, there seems to be a general increase in percentage classified as poor, Malawi and Zambia; decrease for Tanzania and no change for Bangladesh, Mozambique, Nepal and Uganda.

### 5.6.1. Economic level as a feed back from end goals

Economic level as such is not among the measures to be presented. But in order to follow the feed back on human development, we have chosen gross national income, which measures available goods and services for consumption and investments in a country, as an indicator.

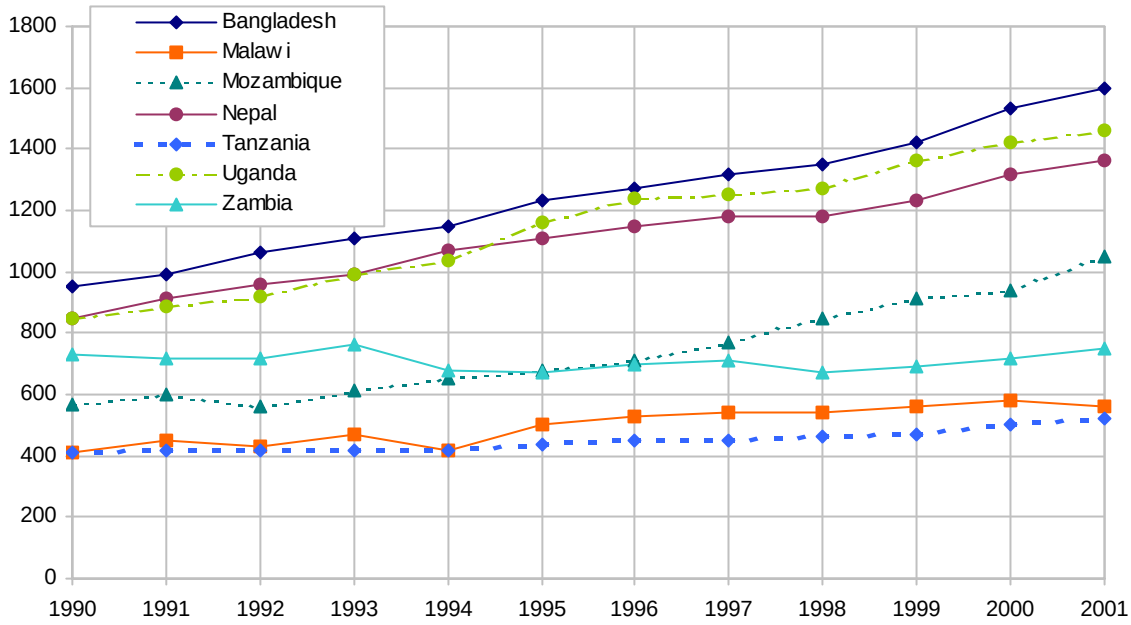
Since we focus on human welfare, we have chosen to present Gross National Income (GNI) measured in PPP$ reflecting the purchasing power and hence potential consumption rather than following the exchange rate which would reflect the investor potential.

**5.28. GNI per capita, PPP (current international $), latest reported**




**5.29. GNI per capita, PPP (current international $), 1990-2001**

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bangladesh | 950 | 990 | 1060 | 1110 | 1150 | 1230 | 1270 | 1320 | 1350 | 1420 | 1530 | 1600 |
| Malawi | 410 | 450 | 430 | 470 | 420 | 500 | 530 | 540 | 540 | 560 | 580 | 560 |
| Mozambique | 570 | 600 | 560 | 610 | 650 | 680 | 710 | 770 | 850 | 910 | 940 | 1050 |
| Nepal | 850 | 910 | 960 | 990 | 1070 | 1110 | 1150 | 1180 | 1180 | 1230 | 1320 | 1360 |
| Tanzania | 410 | 420 | 420 | 420 | 420 | 440 | 450 | 450 | 460 | 470 | 500 | 520 |
| Uganda | 850 | 890 | 920 | 990 | 1040 | 1160 | 1240 | 1250 | 1270 | 1360 | 1420 | 1460 |
| Zambia | 730 | 720 | 720 | 760 | 680 | 670 | 700 | 710 | 670 | 690 | 720 | 750 |



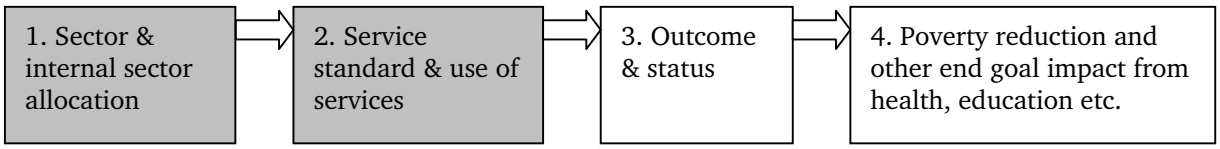
GNI per capita shows that the Asian and African countries are in two different economic leagues and that Uganda managed to climb the ladder towards that league, surpassing Nepal (figure 5.28).

It also shows that all countries with the exception of Zambia have steadily improved their situation (figure 5.29). The rate of improvement is higher for Bangladesh, Nepal and Uganda compared to the other countries, with Mozambique showing the same rapid rate from 1997 onwards. Zambia, which almost had at the same level as Uganda, did not manage to take off and had in fact even reduced the level of GNI per capita in the 1990s. Malawi and Tanzania showed poor performance with Malawi decreasing slightly in 2001.

## 5.7. Statistical relationships between two and two levels for the health sector

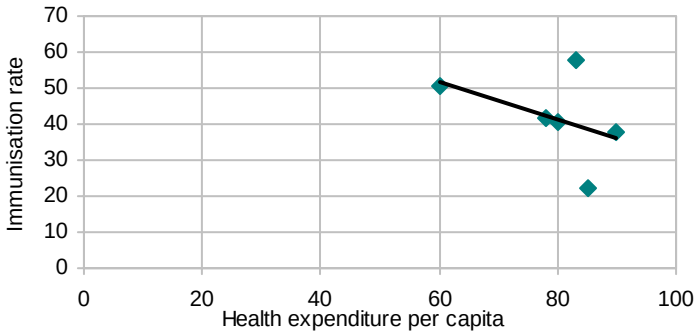
### 5.7.1 Statistical relationship between resource allocation and service standard

We start the focus on two and two monitoring levels from the source, i.e. from resource allocation to service standard and use. For this relationship, it is expected that the higher the health expenditures per capita, then more health services delivered to the public. An indicator for service standard used is vaccination coverage (DPT for children under 12 months). But it should be pointed out that different countries have different priorities in health expenditures thus there may be more variation in one single indicator than it would have been with a composite one.




**5.30. Inputs - outputs in health sector for Norwegian partner countries**

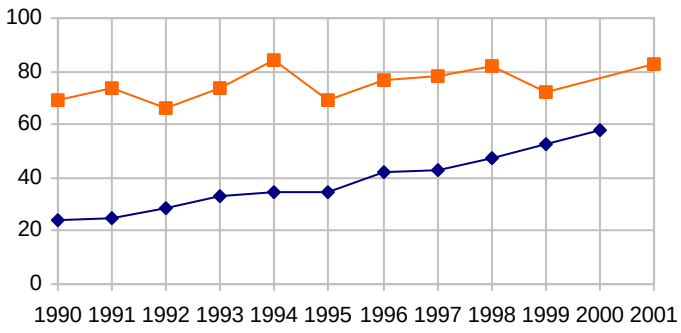
| | Country | EXP | IMM |
|---|---|---|---|
| EXP - Health expenditure per capita, current international PPP$ & IMM - Immunisation, DPT under 12 months, latest reported. | Bangladesh | 58 | 83 |
| | Malawi | 38 | 90 |
| | Mozambique | 40 | 80 |
| | Nepal | .. | 72 |
| | Tanzania | 22 | 85 |
| | Uganda | 51 | 60 |
| | Zambia | 42 | 78 |



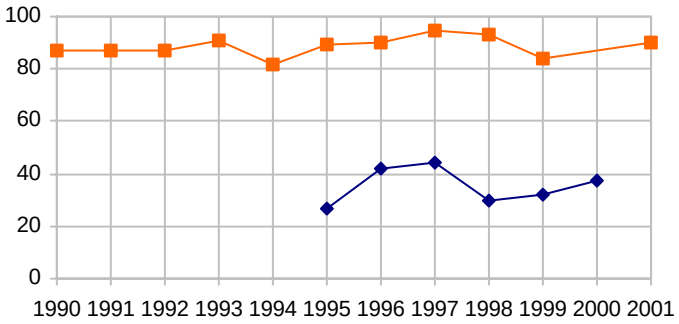

Contrary to what is expected, the latest immunisation rates figures reported for Norwegian partner countries (figure 5.30) show a negative relationship between health expenditures and vaccination coverage. Hence it is an urgent need to check time series at country level.

**5.31. Inputs - outputs in health sector for each Norwegian partner country**

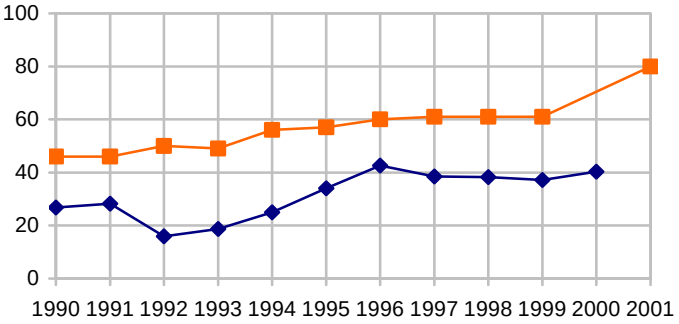
| a. Bangladesh | Year | EXP | IMM |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 24 | 69 |
| | 1991 | 25 | 74 |
| | 1992 | 28 | 66 |
| | 1993 | 33 | 74 |
| | 1994 | 35 | 84 |
| | 1995 | 35 | 69 |
| | 1996 | 42 | 77 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 43 | 78 |
| | 1998 | 48 | 82 |
| | 1999 | 53 | 72 |
| | 2000 | 58 | |
| | 2001 | | 83 |



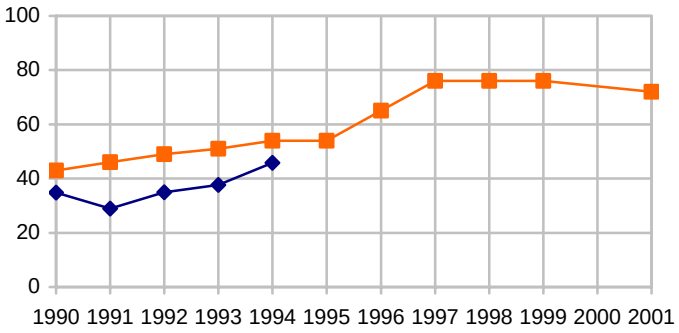
| **b. Malawi** | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | | 87 |
| EXP - Health | 1991 | | 87 |
| expenditure per | 1992 | | 87 |
| capita, PPP (current | 1993 | | 91 |
| international $) | 1994 | | 82 |
| | 1995 | 26 | 89 |
| | 1996 | 42 | 90 |
| IMM - Immunisation, | 1997 | 44 | 95 |
| DPT (% of children | 1998 | 29 | 93 |
| under 12 months) | 1999 | 32 | 84 |
| | 2000 | 38 | |
| | 2001 | | 90 |



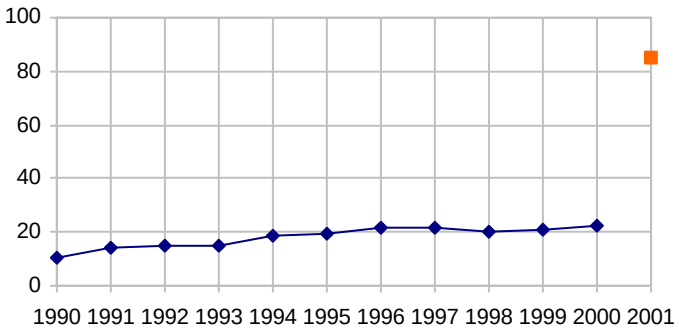

| **c. Mozambique** | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | 27 | 46 |
| EXP - Health | 1991 | 28 | 46 |
| expenditure per | 1992 | 16 | 50 |
| capita, PPP (current | 1993 | 19 | 49 |
| international $) | 1994 | 25 | 56 |
| | 1995 | 34 | 57 |
| | 1996 | 43 | 60 |
| IMM - Immunisation, | 1997 | 39 | 61 |
| DPT (% of children | 1998 | 38 | 61 |
| under 12 months) | 1999 | 37 | 61 |
| | 2000 | 40 | .. |
| | 2001 | | 80 |



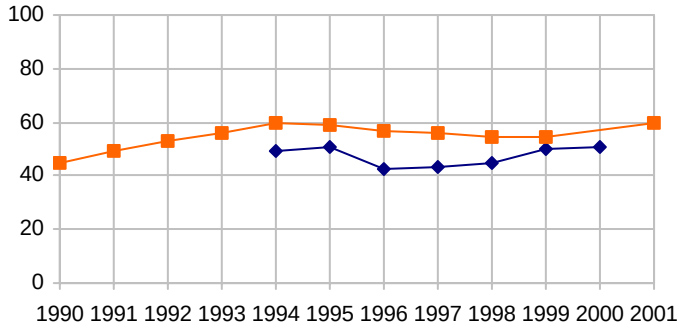

| **d. Nepal** | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | 80 | 41 |
| EXP - Health | 1991 | 74 | .. |
| expenditure per | 1992 | 72 | .. |
| capita, PPP (current | 1993 | 68 | .. |
| international $) | 1994 | 63 | 42 |
| | 1995 | 65 | .. |
| | 1996 | 75 | .. |
| IMM - Immunisation, | 1997 | 78 | 41 |
| DPT (% of children | 1998 | | 32 |
| under 12 months) | 1999 | | |
| | 2000 | | |
| | 2001 | | |



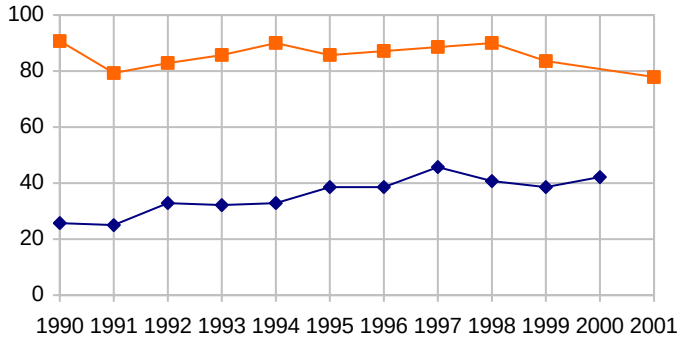

| **e. Tanzania** | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | 11 | .. |
| EXP - Health | 1991 | 14 | .. |
| expenditure per | 1992 | 15 | .. |
| capita, PPP (current | 1993 | 15 | .. |
| international $) | 1994 | 18 | .. |
| | 1995 | 19 | .. |
| | 1996 | 21 | .. |
| IMM - Immunization, | 1997 | 21 | .. |
| DPT (% of children | 1998 | 20 | .. |
| under 12 months) | 1999 | 21 | .. |
| | 2000 | 22 | .. |
| | 2001 | | 85 |



| f. Uganda | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | .. | 45 |
| EXP - Health expenditure per capita, PPP (current international $) | 1991 | .. | 49 |
| | 1992 | .. | 53 |
| | 1993 | .. | 56 |
| | 1994 | 49 | 60 |
| | 1995 | 51 | 59 |
| | 1996 | 43 | 57 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 43 | 56 |
| | 1998 | 45 | 55 |
| | 1999 | 50 | 55 |
| | 2000 | 51 | .. |
| | 2001 | | 60 |



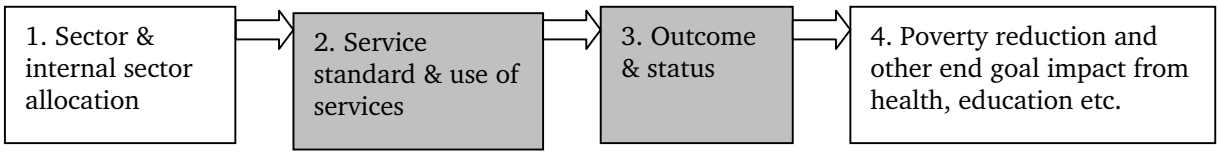

| g. Zambia | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | 26 | 91 |
| EXP - Health expenditure per capita, PPP (current international $) | 1991 | 25 | 79 |
| | 1992 | 33 | 83 |
| | 1993 | 32 | 86 |
| | 1994 | 33 | 90 |
| | 1995 | 38 | 86 |
| | 1996 | 39 | 87 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 46 | 89 |
| | 1998 | 41 | 90 |
| | 1999 | 39 | 84 |
| | 2000 | 42 | .. |
| | 2001 | .. | 78 |




It turns out that time series at country level does not show the same confusing pattern as across the countries, but rather as expected. Malawi, Mozambique, Nepal, and Uganda showed the expected relationship; when expenditures increased the vaccination rates followed suit and increased as well.

Health expenditures increased in Bangladesh and Zambia as well, but values for immunisation rates fluctuated. The results imply that for the last two countries, DPT immunisation rate was not dependent on the health budget but on other factors.

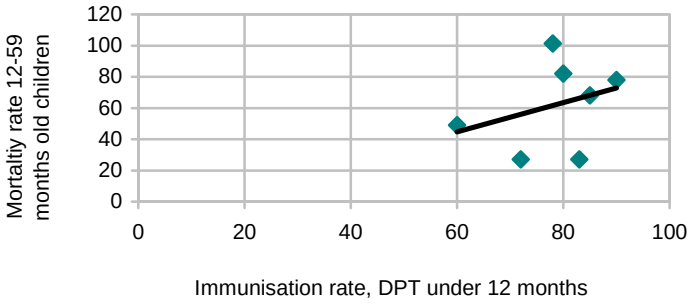
### 5.7.2. Output-outcome health sector




In order to follow the outcome of vaccination, we calculated child mortality for children surviving infancy i.e. child mortality from 1 year old to 5 year old ones or according to their age from 12 to 59 months old children. We would expect that the higher the output (Immunisation rate, DPT for children under 12 months), the lower the outcome (mortality rate per 1,000 of children from 1-5 years old). It would be interesting to look at factors that could have lead and contributed to increase in mortality rates. A dramatic epidemic that could have had a strong effect is HIV/AIDS that has hit hard the continent.

**5.32. Outputs - outcome in health sector for Norwegian partner countries**

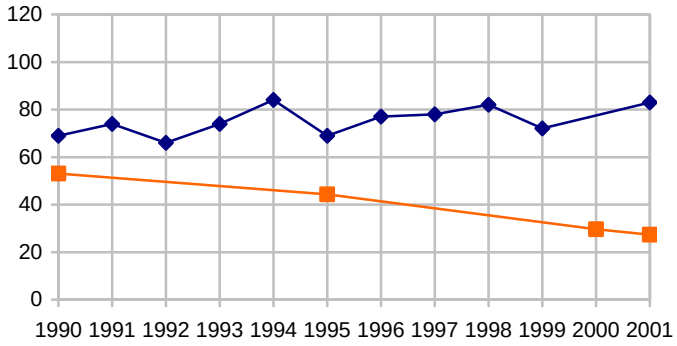
| | Country | IMM | MORT |
|---|---|---|---|
| IMM - Immunisation, DPT under 12 months & MORT - Mortality rate 12-59 months per 1 000 1-year old children, latest reported. | Bangladesh | 83 | 27 |
| | Malawi | 90 | 78 |
| | Mozambique | 80 | 82 |
| | Nepal | 72 | 27 |
| | Tanzania | 85 | 68 |
| | Uganda | 60 | 49 |
| | Zambia | 78 | 101 |



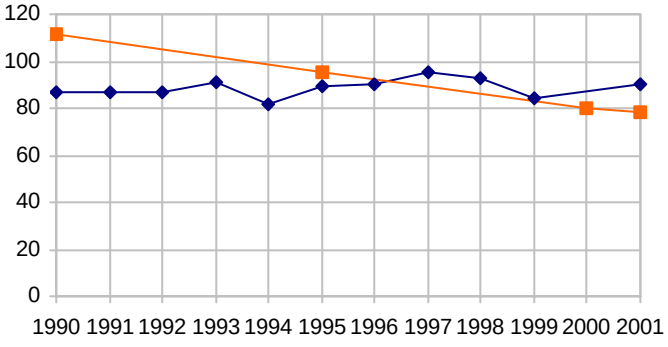

Contrary to what you would expect, mortality increases with vaccination coverage. In Wold, Olsen & Opdahl (2002) there was a clear and strong relationship between increased vaccination and decreased mortality rate. But with the data reported in 2003 WDI (figure 5.32), there is a puzzling positive relationship between vaccination and mortality rate. Again we need to check time series at country level, see figure 5.33.

**5.33. Outputs - outcome in health sector for each Norwegian partner country**

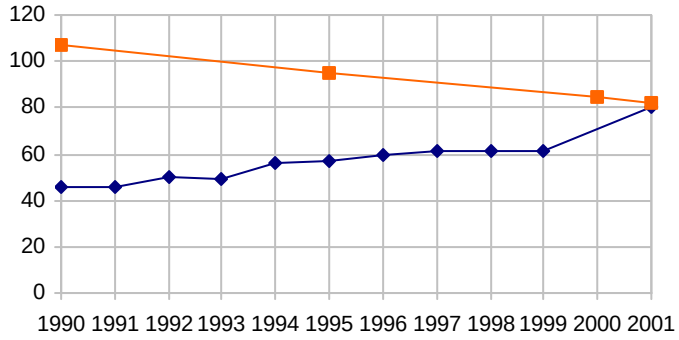
| **a. Bangladesh** | Year | IMM | MORT |
|---|---|---|---|
| IMM - Immunisation, DPT (% of children under 12 months) | 1990 | 69 | 53 |
| | 1991 | 74 | |
| | 1992 | 66 | |
| | 1993 | 74 | |
| | 1994 | 84 | |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children). | 1995 | 69 | 44 |
| | 1996 | 77 | |
| | 1997 | 78 | |
| | 1998 | 82 | |
| | 1999 | 72 | |
| | 2000 | .. | 30 |
| | 2001 | 83 | 27 |



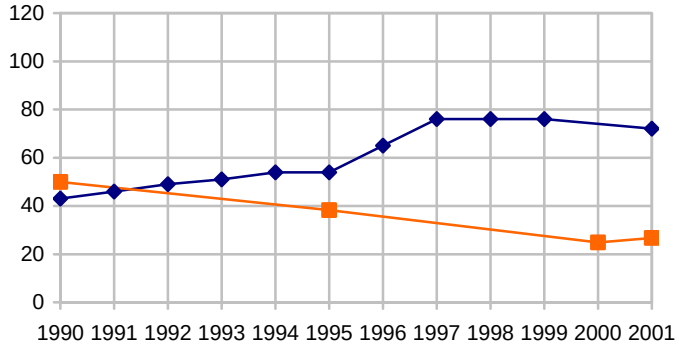

| **b. Malawi** | Year | IMM | MORT |
|---|---|---|---|
| IMM - Immunisation, DPT (% of children under 12 months) | 1990 | 87 | 111 |
| | 1991 | 87 | .. |
| | 1992 | 87 | .. |
| | 1993 | 91 | .. |
| | 1994 | 82 | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1995 | 89 | 96 |
| | 1996 | 90 | .. |
| | 1997 | 95 | .. |
| | 1998 | 93 | .. |
| | 1999 | 84 | .. |
| | 2000 | | 80 |
| | 2001 | 90 | 78 |



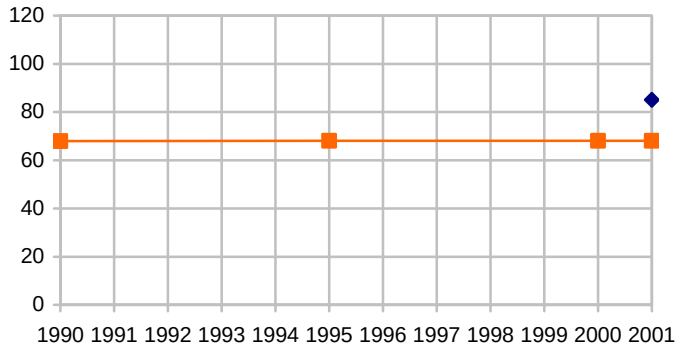
| **c. Mozambique** | Year | IMM | MORT |
|---|---|---|---|
| | 1990 | 46 | 107 |
| IMM - Immunisation, | 1991 | 46 | .. |
| DPT (% of children | 1992 | 50 | .. |
| under 12 months) | 1993 | 49 | .. |
| | 1994 | 56 | .. |
| | 1995 | 57 | 95 |
| MORT - Mortality rate | 1996 | 60 | .. |
| 12-59 months (per 1 | 1997 | 61 | .. |
| 000 1-year old | 1998 | 61 | .. |
| children) | 1999 | 61 | .. |
| | 2000 | .. | 85 |
| | 2001 | 80 | 82 |



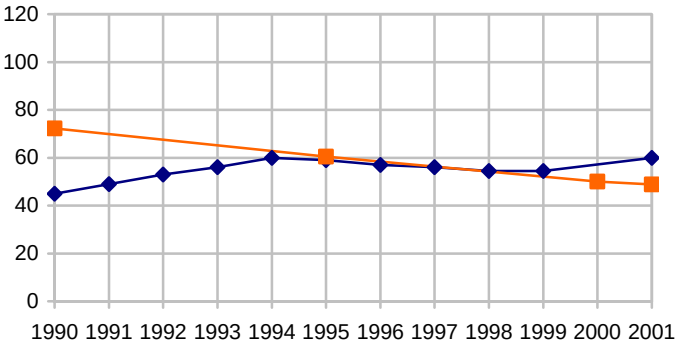

| **d. Nepal** | Year | IMM | MORT |
|---|---|---|---|
| | 1990 | 43 | 50 |
| IMM - Immunisation, | 1991 | 46 | .. |
| DPT (% of children | 1992 | 49 | .. |
| under 12 months) | 1993 | 51 | .. |
| | 1994 | 54 | .. |
| | 1995 | 54 | 38 |
| MORT - Mortality rate | 1996 | 65 | .. |
| 12-59 months (per 1 | 1997 | 76 | .. |
| 000 1-year old | 1998 | 76 | .. |
| children) | 1999 | 76 | .. |
| | 2000 | .. | 25 |
| | 2001 | 72 | 27 |



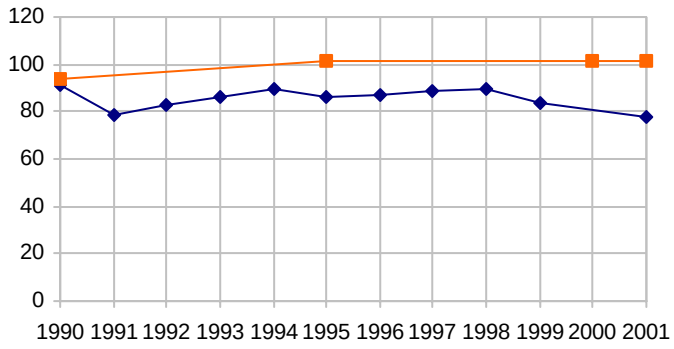

| **e. Tanzania** | Year | IMM | MORT |
|---|---|---|---|
| | 1990 | .. | 68 |
| IMM - Immunisation, | 1991 | .. | .. |
| DPT (% of children | 1992 | .. | .. |
| under 12 months) | 1993 | .. | .. |
| | 1994 | .. | .. |
| | 1995 | .. | 68 |
| MORT - Mortality rate | 1996 | .. | .. |
| 12-59 months (per 1 | 1997 | .. | .. |
| 000 1-year old | 1998 | .. | .. |
| children) | 1999 | .. | .. |
| | 2000 | .. | 68 |
| | 2001 | 85 | 68 |




| **f. Uganda** | Year | IMM | MORT |
|---|---|---|---|
| | 1990 | 45 | 72 |
| IMM - Immunisation, | 1991 | 49 | .. |
| DPT (% of children | 1992 | 53 | .. |
| under 12 months) | 1993 | 56 | .. |
| | 1994 | 60 | .. |
| | 1995 | 59 | 60 |
| MORT - Mortality rate | 1996 | 57 | .. |
| 12-59 months (per 1 | 1997 | 56 | .. |
| 000 1-year old | 1998 | 55 | .. |
| children) | 1999 | 55 | .. |
| | 2000 | .. | 50 |
| | 2001 | 60 | 49 |

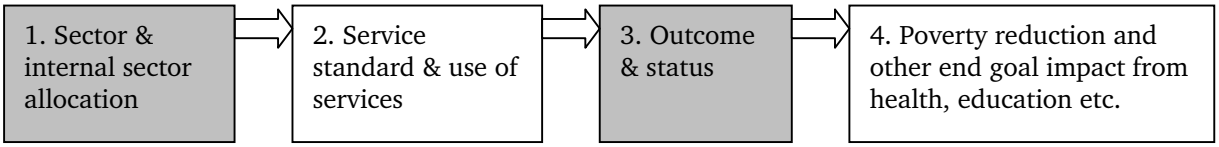


| g. Zambia | Year | IMM | MORT |
|---|---|---|---|
| | 1990 | 91 | 94 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1991 | 79 | .. |
| | 1992 | 83 | .. |
| | 1993 | 86 | .. |
| | 1994 | 90 | .. |
| | 1995 | 86 | 101 |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1996 | 87 | .. |
| | 1997 | 89 | .. |
| | 1998 | 90 | .. |
| | 1999 | 84 | .. |
| | 2000 | .. | 101 |
| | 2001 | 78 | 101 |




In all countries except Zambia and Tanzania, immunisation increased with fluctuations and mortality declined, just as expected. In Zambia immunisation rates fluctuated but data does not allow following child mortality on a yearly basis. Due to lack of data on immunisation, it is not possible to draw the expected trend for Tanzania.

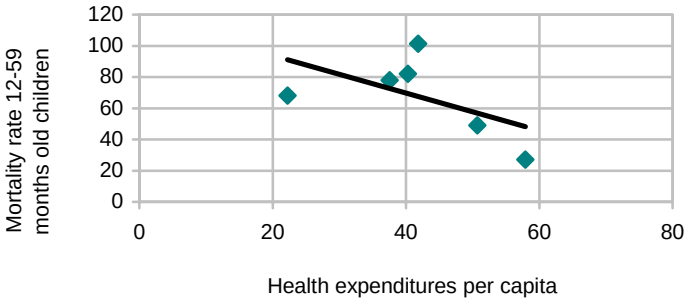
### 5.7.3. Input-outcome health sector




We have chosen to present the relationship between input and outcome. It is expected that input (measured through health expenditures per capita PPP) have a negative relationship with outcome (measured through mortality rate for children for 2-5 years old). As pointed out in the output-outcome relationship, it is important to note that there can also be other variables affecting mortality rates like the HIV/AIDS epidemic.

**5.34. Inputs - outcome in health sector for Norwegian partner countries**

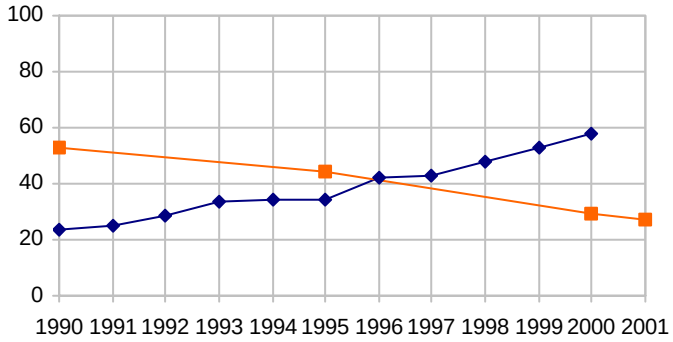
| | Country | EXP | MORT |
|---|---|---|---|
| EXP-Health expenditure per capita, current international $ & MORT-Mortality rate 12-59 months (per 1 000 1-year old children), latest reported. | Bangladesh | 58 | 27 |
| | Malawi | 38 | 78 |
| | Mozambique | 40 | 82 |
| | Nepal | .. | 27 |
| | Tanzania | 22 | 68 |
| | Uganda | 51 | 49 |
| | Zambia | 42 | 101 |



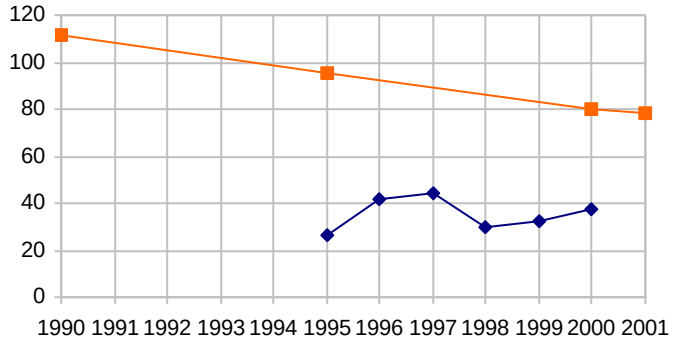

As expected, increase in health expenditures are followed by lower child mortality. The data presented in 2003 shows that Bangladesh had the highest expenditure per capita and also the lowest mortality rate (figure 5.34). For the five African countries there were large variations. For four of the countries where data are reported, low health expenditures are followed by higher mortality rates. An exception is Uganda, which had the second highest health expenditure per capita but had a relatively high mortality rate.

**5.35. Inputs - outcome in health sector for each Norwegian partner country**

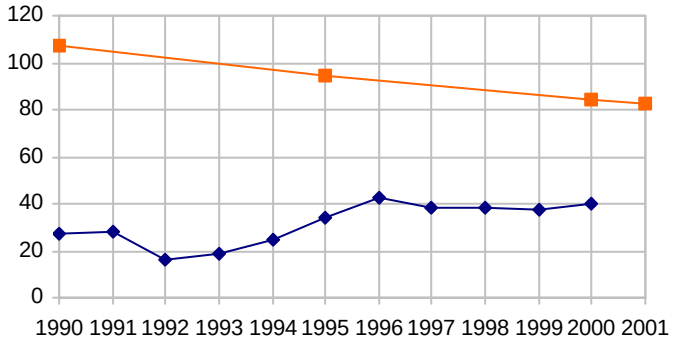
| **a. Bangladesh** | Year | EXP | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 24 | 53 |
| | 1991 | 25 | .. |
| | 1992 | 28 | .. |
| | 1993 | 33 | .. |
| | 1994 | 35 | .. |
| | 1995 | 35 | 44 |
| | 1996 | 42 | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1997 | 43 | .. |
| | 1998 | 48 | .. |
| | 1999 | 53 | .. |
| | 2000 | 58 | 30 |
| | 2001 | | 27 |



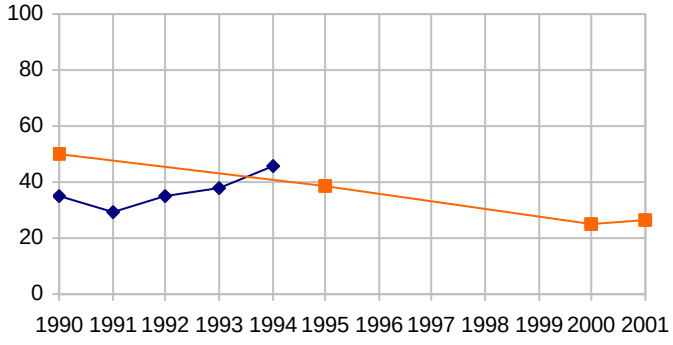

| **b. Malawi** | Year | EXP | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | .. | 111 |
| | 1991 | .. | .. |
| | 1992 | .. | .. |
| | 1993 | .. | .. |
| | 1994 | .. | .. |
| | 1995 | 26 | 96 |
| | 1996 | 42 | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1997 | 44 | .. |
| | 1998 | 29 | .. |
| | 1999 | 32 | .. |
| | 2000 | 38 | 80 |
| | 2001 | .. | 78 |



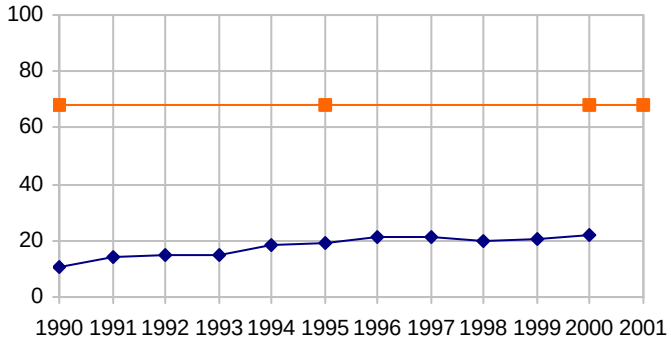

| **c. Mozambique** | Year | EXP | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 27 | 107 |
| | 1991 | 28 | .. |
| | 1992 | 16 | .. |
| | 1993 | 19 | .. |
| | 1994 | 25 | .. |
| | 1995 | 34 | 95 |
| | 1996 | 43 | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1997 | 39 | .. |
| | 1998 | 38 | .. |
| | 1999 | 37 | .. |
| | 2000 | 40 | 85 |
| | 2001 | | 82 |



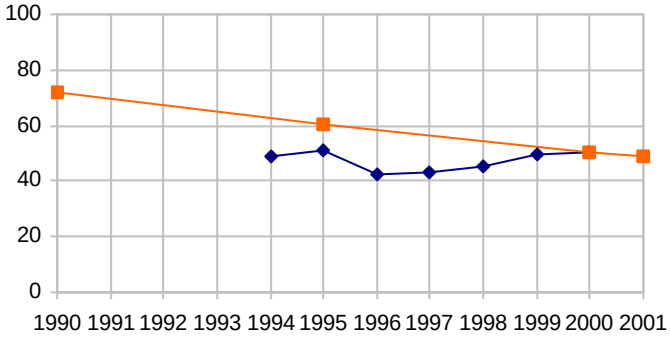

| **d. Nepal** | Year | EXP | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 35 | 50 |
| | 1991 | 29 | .. |
| | 1992 | 35 | .. |
| | 1993 | 38 | .. |
| | 1994 | 46 | .. |
| | 1995 | .. | 38 |
| | 1996 | | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1997 | | .. |
| | 1998 | | .. |
| | 1999 | | .. |
| | 2000 | | 25 |
| | 2001 | | 27 |



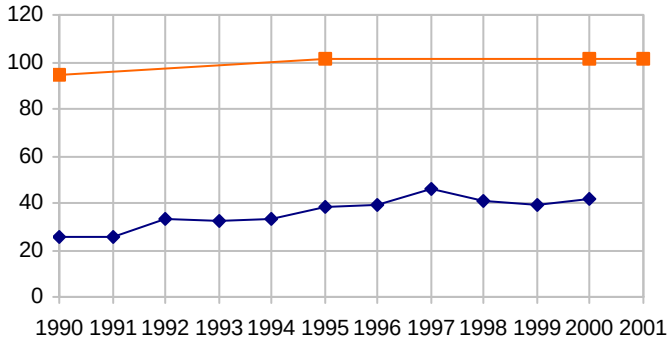
| e. Tanzania | Year | EXP | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 11 | 68 |
| | 1991 | 14 | .. |
| | 1992 | 15 | .. |
| | 1993 | 15 | .. |
| | 1994 | 18 | .. |
| | 1995 | 19 | 68 |
| | 1996 | 21 | .. |
| | 1997 | 21 | .. |
| | 1998 | 20 | .. |
| | 1999 | 21 | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 2000 | 22 | 68 |
| | 2001 | | 68 |




| f. Uganda | Year | EXP | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | .. | 72 |
| | 1991 | .. | .. |
| | 1992 | .. | .. |
| | 1993 | .. | .. |
| | 1994 | 49 | .. |
| | 1995 | 51 | 60 |
| | 1996 | 43 | .. |
| | 1997 | 43 | .. |
| | 1998 | 45 | .. |
| | 1999 | 50 | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 2000 | 51 | 50 |
| | 2001 | | 49 |

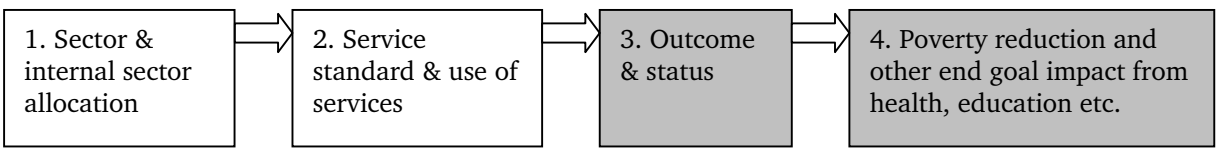



| g. Zambia | Year | EXP | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 26 | 94 |
| | 1991 | 25 | .. |
| | 1992 | 33 | .. |
| | 1993 | 32 | .. |
| | 1994 | 33 | .. |
| | 1995 | 38 | 101 |
| | 1996 | 39 | .. |
| | 1997 | 46 | .. |
| | 1998 | 41 | .. |
| | 1999 | 39 | .. |
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 2000 | 42 | 101 |
| | 2001 | | 101 |




In three countries, Bangladesh, Mozambique and Nepal, health expenditures increased and mortality declined, just as expected. In Uganda, health expenditures increased in most years but despite a sudden level drop in 1996, child mortality declined throughout the period. Both Tanzania and Zambia experienced increases in health expenditures as a whole, but in Tanzania the child mortality did not decline at all in the period 1990-2001, while the child mortality in Zambia has not changed since 1995. There were missing variables for health expenditures but data gaps were seen mostly for mortality rates
.

### 5.7.4. Outcome-impact health sector

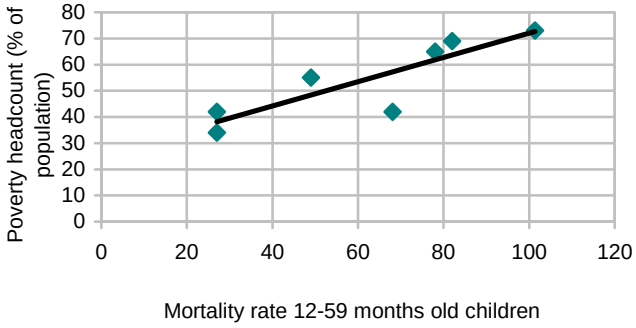



We expect that improved health (measured by lower mortality rates of children from 2-5 years old) give a positive impact towards poverty reduction (lower percentage of people under the poverty line). There

are two reasons for this expectation. First is that that since the main resource of the poor is their own labour, improved health can improve working capacity. Another related reason is that for the working force, any decline in health status (personal or other family members) affects level of resources thus can increase poverty levels.

**5.36. Outcome - impact for health sector for Norwegian partner countries**

| | Country | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) & POV - Poverty headcount, national (% of population), latest reported. | Bangladesh | 27 | 34 |
| | Malawi | 78 | 65 |
| | Mozambique | 82 | 69 |
| | Nepal | 27 | 42 |
| | Tanzania | 68 | 42 |
| | Uganda | 49 | 55 |
| | Zambia | 101 | 73 |

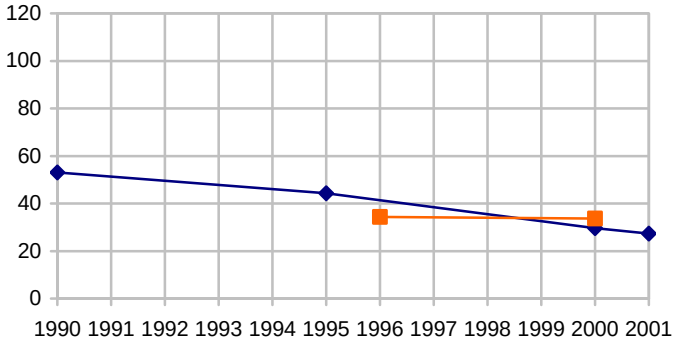



As expected, lower mortality is followed by lower poverty levels for Norwegian development partner countries. The relationship between mortality rates and poverty is quite strong in the data presented in 2003.

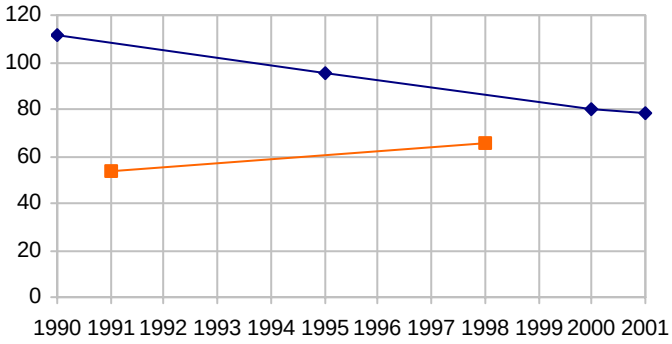
In all partner countries, high mortality rates are related to high poverty levels and low mortality rates to low poverty rates.

**5.37. Outcome - impact in health sector for each Norwegian partner country**

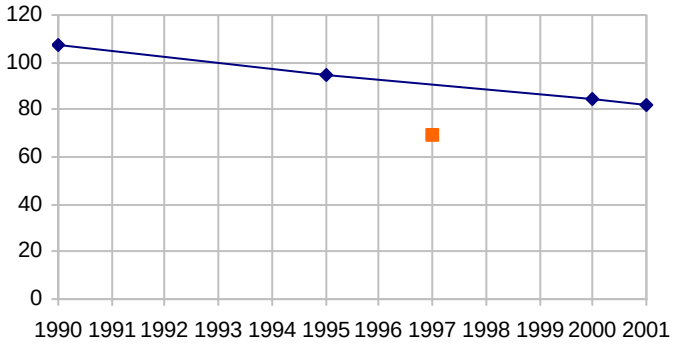
| **a. Bangladesh** | Year | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1990 | 53 | .. |
| | 1991 | .. | .. |
| | 1992 | .. | .. |
| | 1993 | .. | .. |
| | 1994 | .. | .. |
| | 1995 | 44 | .. |
| POV - National poverty incidence (% under national poverty line) | 1996 | .. | 34 |
| | 1997 | .. | .. |
| | 1998 | .. | .. |
| | 1999 | .. | .. |
| | 2000 | 30 | 34 |
| | 2001 | 27 | .. |



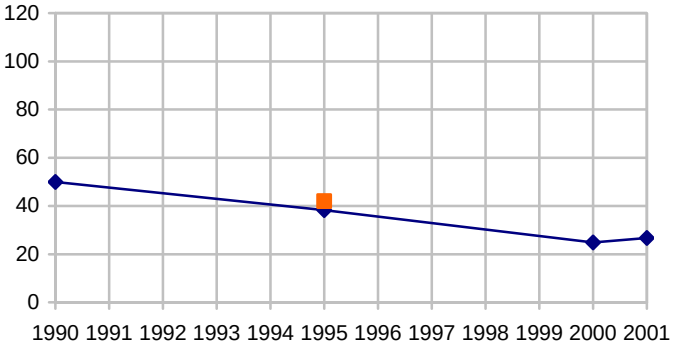

| **b. Malawi** | Year | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1990 | 111 | .. |
| | 1991 | .. | 54 |
| | 1992 | .. | .. |
| | 1993 | .. | .. |
| | 1994 | .. | .. |
| | 1995 | 96 | .. |
| POV - National poverty incidence (% under national poverty line) | 1996 | .. | .. |
| | 1997 | .. | .. |
| | 1998 | .. | 65 |
| | 1999 | .. | .. |
| | 2000 | 80 | .. |
| | 2001 | 78 | .. |



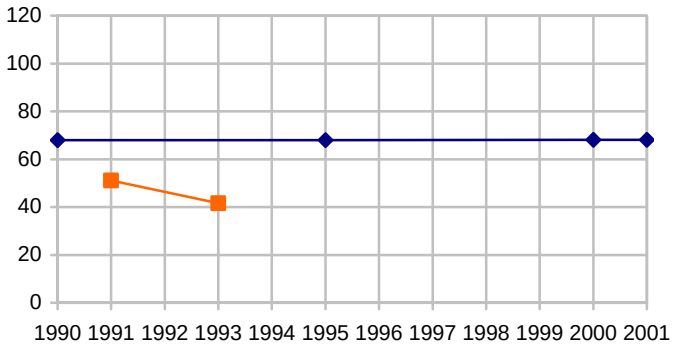
| **c. Mozambique** | Year | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1990 | 107 | .. |
| | 1991 | .. | .. |
| | 1992 | .. | .. |
| | 1993 | .. | .. |
| | 1994 | .. | .. |
| | 1995 | 95 | .. |
| | 1996 | .. | .. |
| POV - National poverty incidence (% under national poverty line) | 1997 | .. | 69 |
| | 1998 | .. | .. |
| | 1999 | .. | .. |
| | 2000 | 85 | .. |
| | 2001 | 82 | .. |



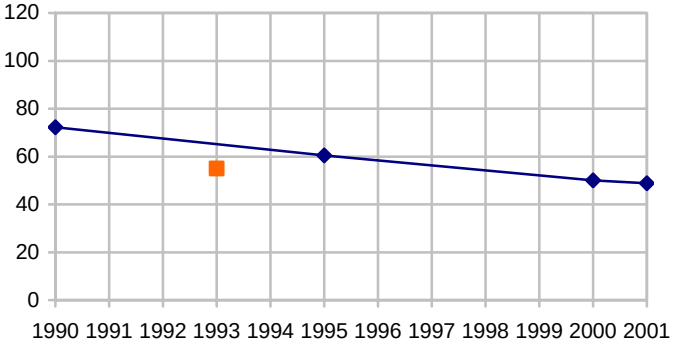

| **d. Nepal** | Year | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1990 | 50 | .. |
| | 1991 | .. | .. |
| | 1992 | .. | .. |
| | 1993 | .. | .. |
| | 1994 | .. | .. |
| | 1995 | 38 | 42 |
| | 1996 | .. | .. |
| POV - National poverty incidence (% under national poverty line) | 1997 | .. | .. |
| | 1998 | .. | .. |
| | 1999 | .. | .. |
| | 2000 | 25 | .. |
| | 2001 | 27 | .. |



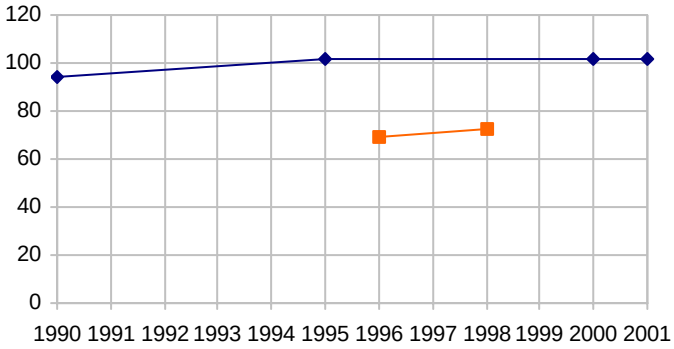

| **e. Tanzania** | Year | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1990 | 68 | .. |
| | 1991 | .. | 51 |
| | 1992 | .. | .. |
| | 1993 | .. | 42 |
| | 1994 | .. | .. |
| | 1995 | 68 | .. |
| | 1996 | .. | .. |
| POV - National poverty incidence (% under national poverty line) | 1997 | .. | .. |
| | 1998 | .. | .. |
| | 1999 | .. | .. |
| | 2000 | 68 | .. |
| | 2001 | 68 | .. |




| **f. Uganda** | Year | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1990 | 72 | .. |
| | 1991 | .. | .. |
| | 1992 | .. | .. |
| | 1993 | .. | 55 |
| | 1994 | .. | .. |
| | 1995 | 60 | .. |
| | 1996 | .. | .. |
| POV - National poverty incidence (% under national poverty line) | 1997 | .. | .. |
| | 1998 | .. | .. |
| | 1999 | .. | .. |
| | 2000 | 50 | .. |
| | 2001 | 49 | .. |



| g. Zambia | Year | MORT | POV |
|---|---|---|---|
| MORT - Mortality rate 12-59 months (per 1 000 1-year old children) | 1990 | 94 | . |
| | 1991 | .. | .. |
| | 1992 | .. | .. |
| | 1993 | .. | .. |
| | 1994 | .. | .. |
| | 1995 | 101 | .. |
| POV - National poverty incidence (% under national poverty line) | 1996 | .. | 69 |
| | 1997 | .. | .. |
| | 1998 | .. | 73 |
| | 1999 | .. | .. |
| | 2000 | 101 | .. |
| | 2001 | 94 | . |

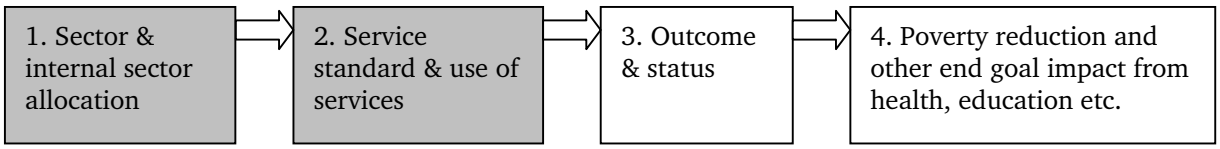



As already known, there was a general decrease in mortality rates, except for Tanzania and Zambia. From data available in 2003, poverty did not follow suit at country level. For Bangladesh, though there was a decrease in mortality rate, poverty levels remained the same. Malawi and Zambia showed a relationship but in opposite direction of what is expected. For Mozambique, Nepal and Uganda the data on poverty is limited to one year only.

## 5.8. Statistical relationships between two & two levels for the education sector

### 5.8.1. Statistical relationship between resource allocation and service standard

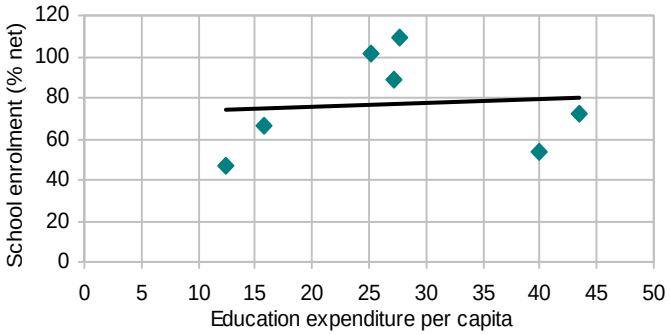
*Input- output education sector:*




Just as was seen for the health sector, it is expected that resources allocated to the education sector should affect the scope and quality of services offered. The indicator for service standard is enrolment in the primary education sector.

**5.38. Inputs - outputs in education sector for Norwegian partner countries**

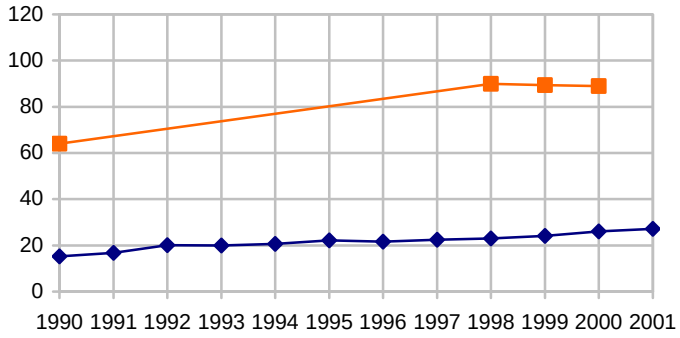
| | Country | EXP | ENR |
|---|---|---|---|
| EXP-Education expenditure per capita, PPP (current international $) & ENR-School enrolment, primary (% net), latest reported. | Bangladesh | 27 | 89 |
| | Malawi | 25 | 101 |
| | Mozambique | 40 | 54 |
| | Nepal | 44 | 72 |
| | Tanzania | 12 | 47 |
| | Uganda | 28 | 109 |
| | Zambia | 16 | 66 |



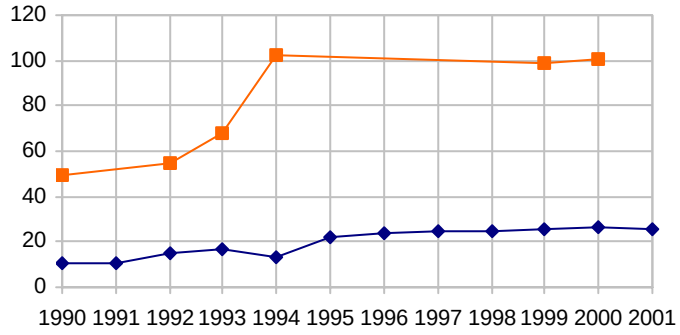

The expectation is that that high education expenditure is followed by high enrolment rates. On average this is the case, but the relationship is very weak, and it is more correct to say that there are hardly any general increase in enrolment rates when educational expenditures are increasing. Again it is necessary to review country level trends to understand the relationship.

**5.39. Inputs - outputs in education sector for each Norwegian partner country, 1990-2001**

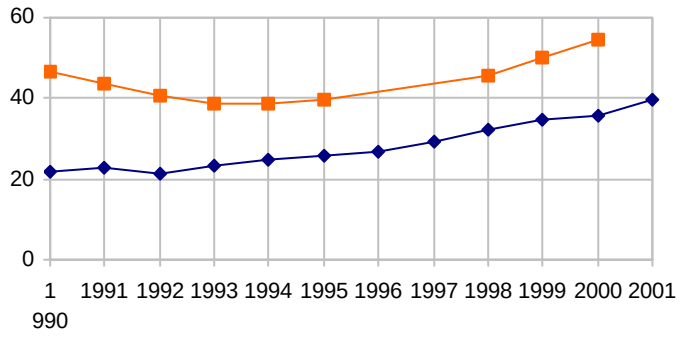
| a. Bangladesh | Year | EXP | ENR |
|---|---|---|---|
| | 1990 | 15 | 64 |
| EXP - Education expenditure per capita, PPP (current international $) | 1991 | 17 | .. |
| | 1992 | 20 | .. |
| | 1993 | 20 | .. |
| | 1994 | 21 | .. |
| | 1995 | 22 | .. |
| | 1996 | 22 | .. |
| ENR - School enrolment, primary (%net) | 1997 | 22 | .. |
| | 1998 | 23 | 90 |
| | 1999 | 24 | 89 |
| | 2000 | 26 | 89 |
| | 2001 | 27 | .. |



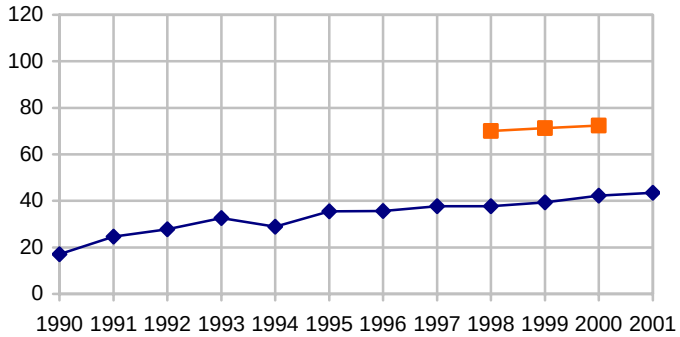

| b. Malawi | Year | EXP | ENR |
|---|---|---|---|
| | 1990 | 10 | 50 |
| EXP - Education expenditure per capita, PPP (current international $) | 1991 | 10 | .. |
| | 1992 | 15 | 55 |
| | 1993 | 17 | 68 |
| | 1994 | 13 | 103 |
| | 1995 | 23 | .. |
| | 1996 | 24 | .. |
| ENR - School enrolment, primary (%net) | 1997 | 24 | .. |
| | 1998 | 24 | .. |
| | 1999 | 25 | 99 |
| | 2000 | 26 | 101 |
| | 2001 | 25 | |



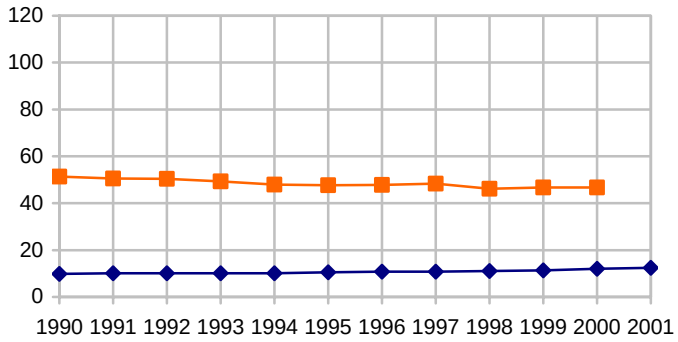

| c. Mozambique | Year | EXP | ENR |
|---|---|---|---|
| | 1990 | 22 | 47 |
| EXP - Education expenditure per capita, PPP (current international $) | 1991 | 23 | 44 |
| | 1992 | 21 | 41 |
| | 1993 | 23 | 39 |
| | 1994 | 25 | 39 |
| | 1995 | 26 | 40 |
| | 1996 | 27 | .. |
| ENR - School enrolment, primary (%net) | 1997 | 29 | .. |
| | 1998 | 32 | 46 |
| | 1999 | 35 | 50 |
| | 2000 | 36 | 54 |
| | 2001 | 40 | |



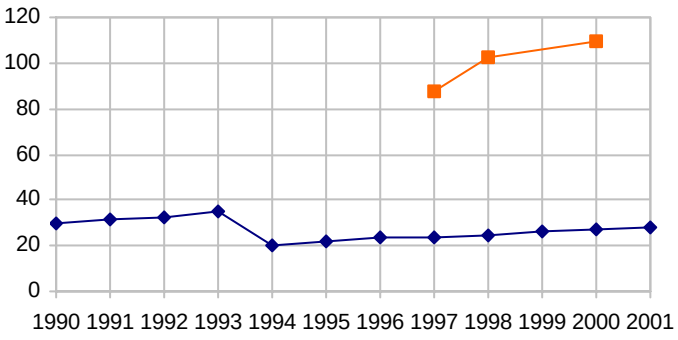

| d. Nepal | Year | EXP | ENR |
|---|---|---|---|
| | 1990 | 17 | .. |
| EXP - Education expenditure per capita, PPP (current international $) | 1991 | 25 | .. |
| | 1992 | 28 | .. |
| | 1993 | 33 | .. |
| | 1994 | 29 | .. |
| | 1995 | 36 | .. |
| | 1996 | 36 | .. |
| ENR - School enrolment, primary (%net) | 1997 | 38 | .. |
| | 1998 | 38 | 70 |
| | 1999 | 39 | 71 |
| | 2000 | 42 | 72 |
| | 2001 | 44 | .. |



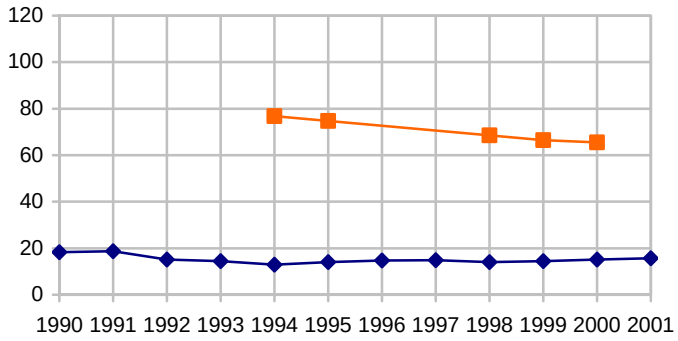
| e. Tanzania | Year | EXP | ENR |
|---|---|---|---|
| | 1990 | 10 | 51 |
| EXP - Education | 1991 | 10 | 51 |
| expenditure per | 1992 | 10 | 50 |
| capita, PPP (current | 1993 | 10 | 49 |
| international $) | 1994 | 10 | 48 |
| | 1995 | 11 | 48 |
| | 1996 | 11 | 48 |
| ENR - School | 1997 | 11 | 48 |
| enrolment, primary | 1998 | 11 | 46 |
| (%net) | 1999 | 11 | 47 |
| | 2000 | 12 | 47 |
| | 2001 | 12 | |




| f. Uganda | Year | EXP | ENR |
|---|---|---|---|
| | 1990 | 30 | .. |
| EXP - Education | 1991 | 31 | .. |
| expenditure per | 1992 | 32 | .. |
| capita, PPP (current | 1993 | 35 | .. |
| international $) | 1994 | 20 | .. |
| | 1995 | 22 | .. |
| | 1996 | 24 | .. |
| ENR - School | 1997 | 24 | 87 |
| enrolment, primary | 1998 | 24 | 103 |
| (%net) | 1999 | 26 | .. |
| | 2000 | 27 | 109 |
| | 2001 | 28 | .. |



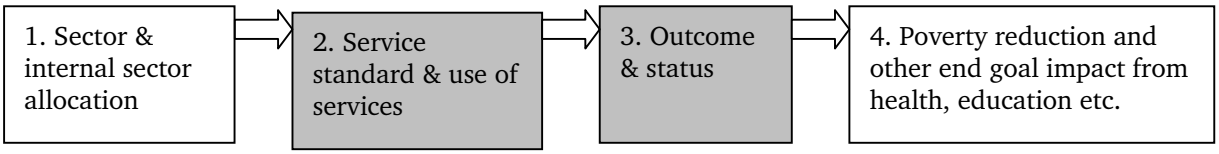

| g. Zambia | Year | EXP | ENR |
|---|---|---|---|
| | 1990 | 18 | .. |
| EXP - Education | 1991 | 19 | .. |
| expenditure per | 1992 | 15 | .. |
| capita, PPP (current | 1993 | 14 | .. |
| international $) | 1994 | 13 | 77 |
| | 1995 | 14 | 75 |
| | 1996 | 15 | .. |
| ENR - School | 1997 | 15 | .. |
| enrolment, primary | 1998 | 14 | 69 |
| (%net) | 1999 | 14 | 66 |
| | 2000 | 15 | 66 |
| | 2001 | 16 | .. |




At the country level, we see that resources allocated for education in general increased yearly. In Uganda there was a drop in 1994, but then again a steady increase towards 2001. In Zambia the expenditures hardly increased after a drop in 1992. There were some data gaps for enrolment rates, but available data showed that increase in resource expenditures were followed by increase in enrolment as expected in Bangladesh, Malawi, Nepal and Uganda. The data for Mozambique showed an initial decline, but then a steady increase as expected after 1996. In Zambia a slight decline in resource expenditures and showed a decline in enrolment rates. Only Tanzania faced reduced enrolment despite increased resources.

The partly weak relationship between education expenditures and level of enrolment can be attributed to other factors like channelling of funds to other sections in the local educational system which does not have any direct effect on enrolment such as increase in teachers salaries, seminars for teachers, investment in educational infrastructure (i.e. school buildings, books) etc. It should be pointed out that the enrolment figures for Malawi from 1993 to 1994 jumped considerably. This jump is connected to the political changes in Malawi wherein there was a heavy effort from the new government to increase participation in education.

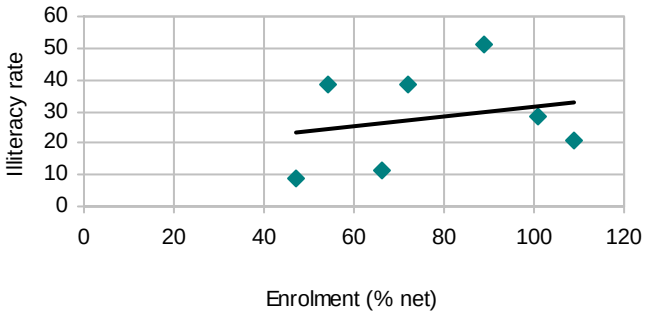
### 5.8.2. Output-outcome education sector




Services offered by the education system are expected to improve outcome. Illiteracy rate is the indicator selected to measure the effectiveness of the school system. Thus it is expected that high rates of enrolment in primary school will correspond to a low illiteracy rate of 15-24 years old.

**5.40. Outputs - outcome in education sector in Norwegian partner countries**

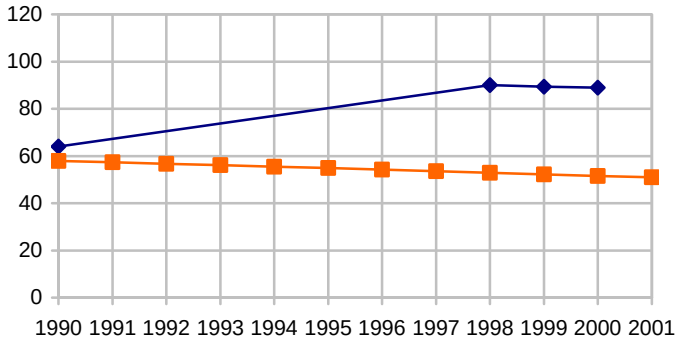
| | Country | ENR | ILL |
|---|---|---|---|
| ENR-School enrolment, primary (% net) & School enrolment, primary (% net) & ILL-Illiteracy rate, youth total (% of people ages 15-24), latest reported. | Bangladesh | 89 | 51 |
| | Malawi | 101 | 28 |
| | Mozambique | 54 | 38 |
| | Nepal | 72 | 38 |
| | Tanzania | 47 | 9 |
| | Uganda | 109 | 21 |
| | Zambia | 66 | 11 |



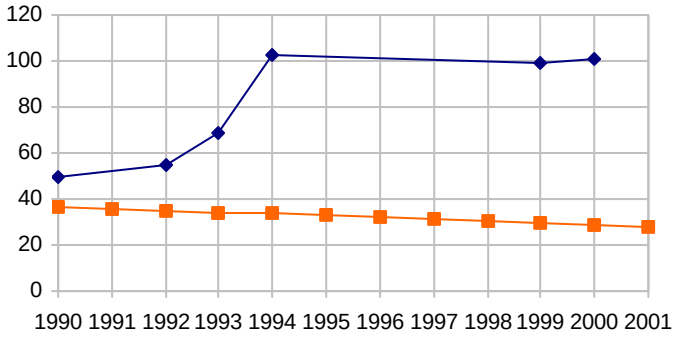

Contrary to expectations, increased enrolment did not reduce illiteracy accordingly (figure 5.40). Looking at the school enrolment figures for primary school, illiteracy figures from Tanzania and Zambia reveals effectiveness in the school system (with only 9 and 11 % illiteracy rates, respectively). For the rest of the NORAD partner countries, school enrolment did not seem to increase literacy rate accordingly.

**5.41. Outputs - outcome in education sector for each Norwegian partner country, 1990-2001**

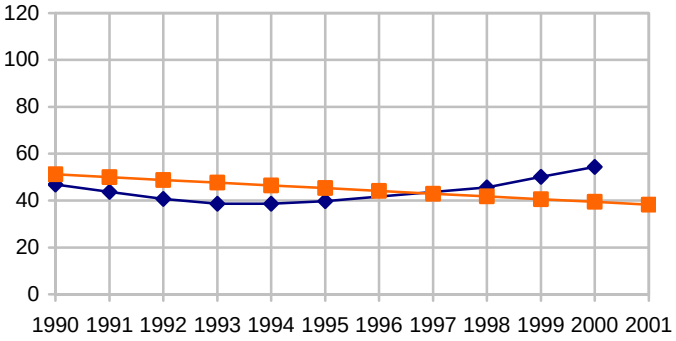
| a. Bangladesh | Year | ENR | ILL |
|---|---|---|---|
| ENR - School enrolment, primary (% net) | 1990 | 64 | 58 |
| | 1991 | .. | 57 |
| | 1992 | .. | 57 |
| | 1993 | .. | 56 |
| | 1994 | .. | 56 |
| | 1995 | .. | 55 |
| | 1996 | .. | 54 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 1997 | .. | 54 |
| | 1998 | 90 | 53 |
| | 1999 | 89 | 52 |
| | 2000 | 89 | 52 |
| | 2001 | .. | 51 |



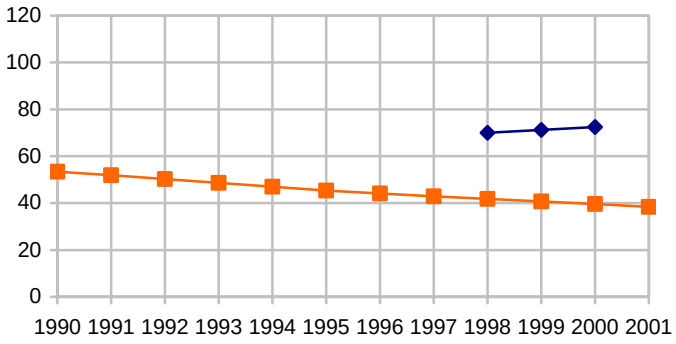
| **b. Malawi** | Year | ENR | ILL |
|---|---|---|---|
| | 1990 | 50 | 37 |
| | 1991 | .. | 36 |
| ENR - School enrolment, primary (% net) | 1992 | 55 | 35 |
| | 1993 | 68 | 34 |
| | 1994 | 103 | 33 |
| | 1995 | .. | 33 |
| | 1996 | .. | 32 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 1997 | .. | 31 |
| | 1998 | .. | 30 |
| | 1999 | 99 | 30 |
| | 2000 | 101 | 29 |
| | 2001 | .. | 28 |



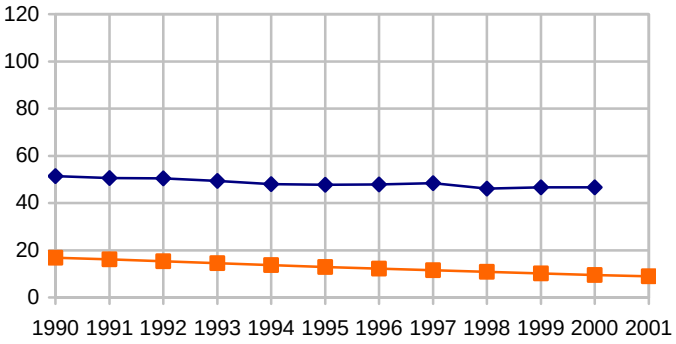

| **c. Mozambique** | Year | ENR | ILL |
|---|---|---|---|
| | 1990 | 47 | 51 |
| | 1991 | 44 | 50 |
| ENR - School enrolment, primary (% net) | 1992 | 41 | 49 |
| | 1993 | 39 | 48 |
| | 1994 | 39 | 46 |
| | 1995 | 40 | 45 |
| | 1996 | .. | 44 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 1997 | .. | 43 |
| | 1998 | 46 | 42 |
| | 1999 | 50 | 41 |
| | 2000 | 54 | 39 |
| | 2001 | .. | 38 |



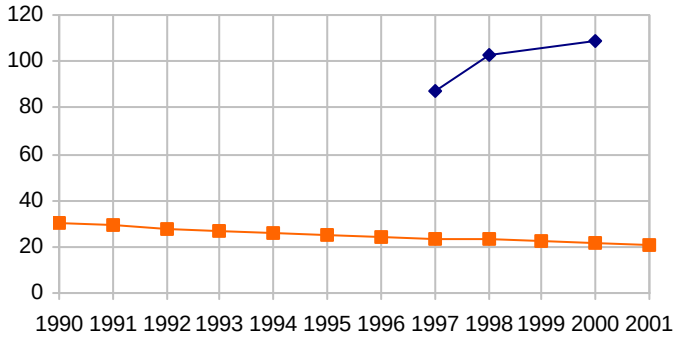

| **d. Nepal** | Year | ENR | ILL |
|---|---|---|---|
| | 1990 | .. | 53 |
| | 1991 | .. | 52 |
| ENR - School enrolment, primary (% net) | 1992 | .. | 50 |
| | 1993 | .. | 49 |
| | 1994 | .. | 47 |
| | 1995 | .. | 45 |
| | 1996 | .. | 44 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 1997 | .. | 43 |
| | 1998 | 70 | 42 |
| | 1999 | 71 | 41 |
| | 2000 | 72 | 40 |
| | 2001 | .. | 38 |



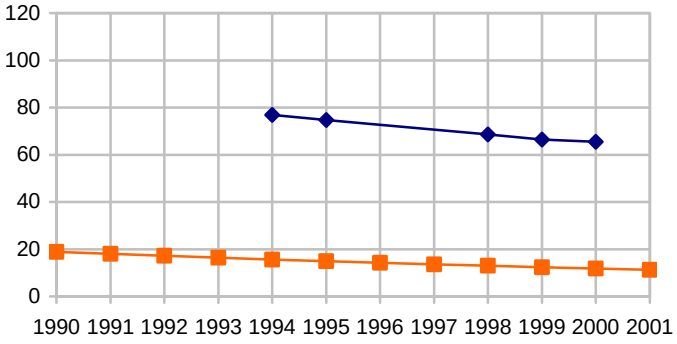

| **e. Tanzania** | Year | ENR | ILL |
|---|---|---|---|
| | 1990 | 51 | 17 |
| | 1991 | 51 | 16 |
| ENR - School enrolment, primary (% net) | 1992 | 50 | 15 |
| | 1993 | 49 | 14 |
| | 1994 | 48 | 14 |
| | 1995 | 48 | 13 |
| | 1996 | 48 | 12 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 1997 | 48 | 12 |
| | 1998 | 46 | 11 |
| | 1999 | 47 | 10 |
| | 2000 | 47 | 9 |
| | 2001 | .. | 9 |



| f. Uganda | Year | ENR | ILL |
|---|---|---|---|
| | 1990 | .. | 30 |
| | 1991 | .. | 29 |
| ENR - School enrolment, primary (% net) | 1992 | .. | 28 |
| | 1993 | .. | 27 |
| | 1994 | .. | 26 |
| | 1995 | .. | 25 |
| | 1996 | .. | 25 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 1997 | 87 | 24 |
| | 1998 | 103 | 23 |
| | 1999 | .. | 22 |
| | 2000 | 109 | 21 |
| | 2001 | .. | 21 |

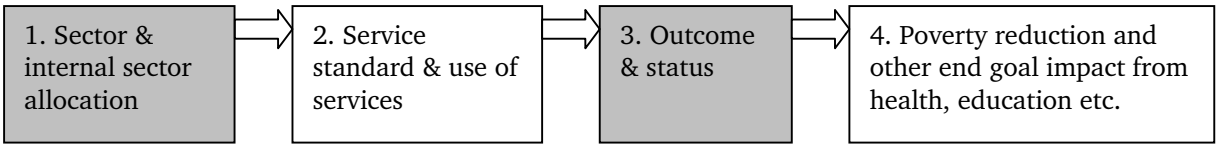



| g. Zambia | Year | ENR | ILL |
|---|---|---|---|
| | 1990 | .. | 19 |
| | 1991 | .. | 18 |
| ENR - School enrolment, primary (% net) | 1992 | .. | 17 |
| | 1993 | .. | 16 |
| | 1994 | 77 | 16 |
| | 1995 | 75 | 15 |
| | 1996 | .. | 14 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 1997 | .. | 14 |
| | 1998 | 69 | 13 |
| | 1999 | 66 | 12 |
| | 2000 | 66 | 12 |
| | 2001 | .. | 11 |




Again lack of enrolment data only allows following the relationship for some years. The general trend based on available data was illiteracy decrease with enrolment rates increase. Given the time lag from schooling to the average 15-24 year old group, the patterns are quite clear. Interestingly enough, illiteracy decreased in Tanzania and Zambia even when enrolment rates decreased.

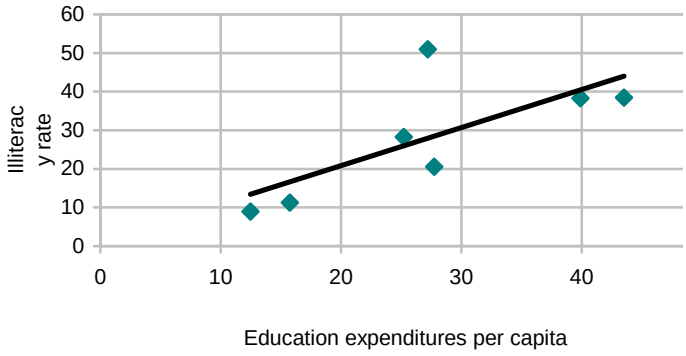
### 5.8.3. Input-outcome education sector




It is expected that an increase in resource allocation for the education sector will have the corresponding decrease in illiteracy rate for 15-24 year olds.

**5.42. Inputs- outcome in education sector in Norwegian partner countries**

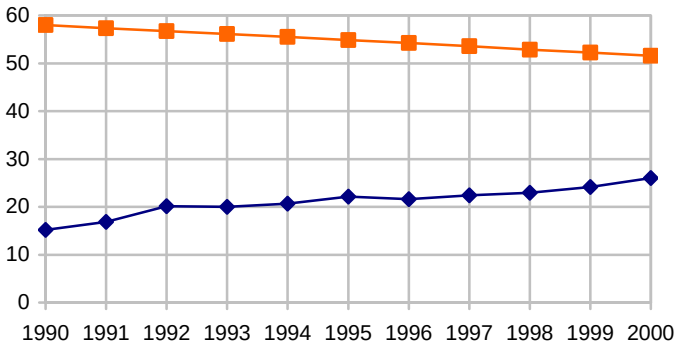
| | Country | EXP | ILL |
|---|---|---|---|
| EXP- Education expenditure per capita, current international PPP$ & ILL-Illiteracy rate, youth total (% of people ages 15-24), latest reported. | Bangladesh | 27 | 51 |
| | Malawi | 25 | 28 |
| | Mozambique | 40 | 38 |
| | Nepal | 44 | 38 |
| | Tanzania | 12 | 9 |
| | Uganda | 28 | 21 |
| | Zambia | 16 | 11 |



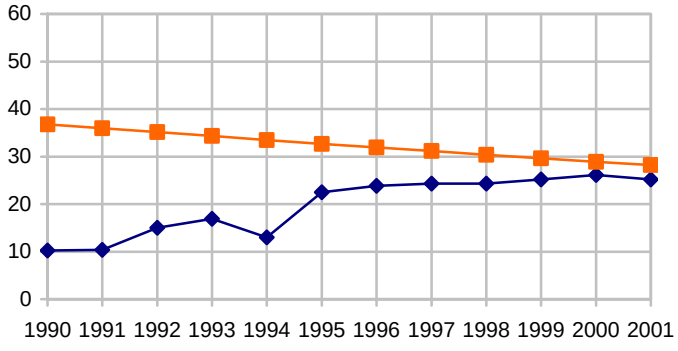

Contrary to expectations, increased expenditures for education is followed by increase rather than decrease in illiteracy rates. There is a surprisingly positive correlation between expenditures for the education sector and illiteracy rate. This result raises questions on how money was used in the education sector and which other factors can affect literacy at the primary level.

**5.43. Inputs - outcome in education sector for each Norwegian partner country**

| **a. Bangladesh** | Year | EXP | ILL |
|---|---|---|---|
| EXP - Education expenditure per capita, PPP (current international $) | 1990 | 15 | 58 |
| | 1991 | 17 | 57 |
| | 1992 | 20 | 57 |
| | 1993 | 20 | 56 |
| | 1994 | 21 | 56 |
| | 1995 | 22 | 55 |
| | 1996 | 22 | 54 |
| | 1997 | 22 | 54 |
| | 1998 | 23 | 53 |
| | 1999 | 24 | 52 |
| | 2000 | 26 | 52 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 2001 | 27 | 51 |




| **b. Malawi** | Year | EXP | ILL |
|---|---|---|---|
| EXP - Education expenditure per capita, PPP (current international $) | 1990 | 10 | 37 |
| | 1991 | 10 | 36 |
| | 1992 | 15 | 35 |
| | 1993 | 17 | 34 |
| | 1994 | 13 | 33 |
| | 1995 | 23 | 33 |
| | 1996 | 24 | 32 |
| | 1997 | 24 | 31 |
| | 1998 | 24 | 30 |
| | 1999 | 25 | 30 |
| | 2000 | 26 | 29 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 2001 | 25 | 28 |

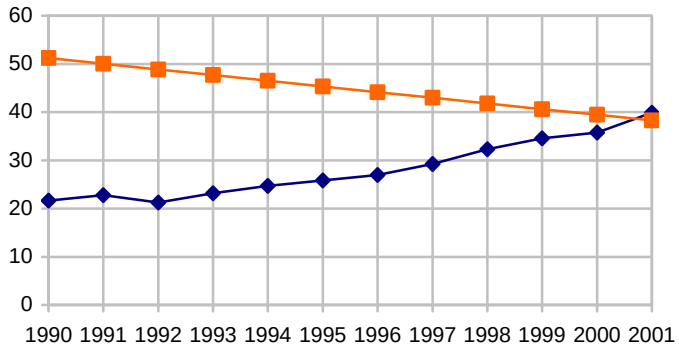


**c. Mozambique**

EXP - Education expenditure per capita, PPP (current international $)

ILL - Illiteracy rate, % of 15 - 24 years old

| Year | EXP | ILL |
|---|---|---|
| 1990 | 22 | 51 |
| 1991 | 23 | 50 |
| 1992 | 21 | 49 |
| 1993 | 23 | 48 |
| 1994 | 25 | 46 |
| 1995 | 26 | 45 |
| 1996 | 27 | 44 |
| 1997 | 29 | 43 |
| 1998 | 32 | 42 |
| 1999 | 35 | 41 |
| 2000 | 36 | 39 |
| 2001 | 40 | 38 |

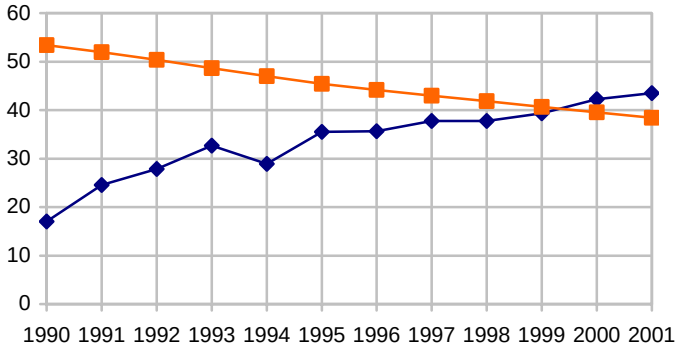



**d. Nepal**

EXP - Education expenditure per capita, PPP (current international $)

ILL - Illiteracy rate, % of 15 - 24 years old

| Year | EXP | ILL |
|---|---|---|
| 1990 | 17 | 53 |
| 1991 | 25 | 52 |
| 1992 | 28 | 50 |
| 1993 | 33 | 49 |
| 1994 | 29 | 47 |
| 1995 | 36 | 45 |
| 1996 | 36 | 44 |
| 1997 | 38 | 43 |
| 1998 | 38 | 42 |
| 1999 | 39 | 41 |
| 2000 | 42 | 40 |
| 2001 | 44 | 38 |

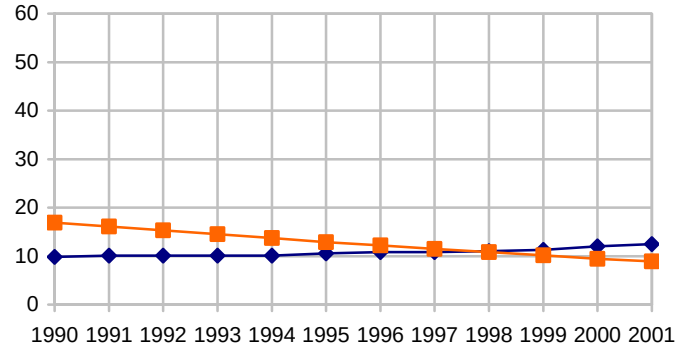



**e. Tanzania**

EXP - Education expenditure per capita, PPP (current international $)

ILL - Illiteracy rate, % of 15 - 24 years old

| Year | EXP | ILL |
|---|---|---|
| 1990 | 10 | 17 |
| 1991 | 10 | 16 |
| 1992 | 10 | 15 |
| 1993 | 10 | 14 |
| 1994 | 10 | 14 |
| 1995 | 11 | 13 |
| 1996 | 11 | 12 |
| 1997 | 11 | 12 |
| 1998 | 11 | 11 |
| 1999 | 11 | 10 |
| 2000 | 12 | 9 |
| 2001 | 12 | 9 |

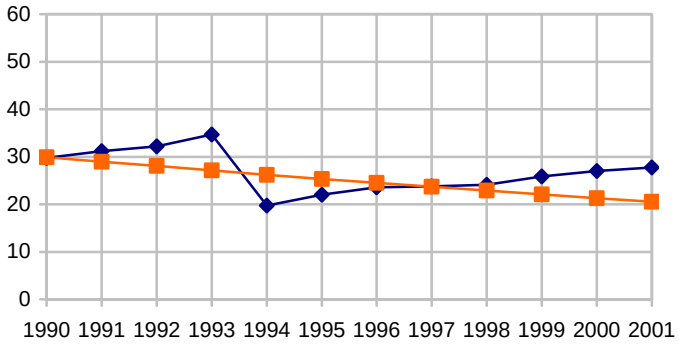



**f. Uganda**

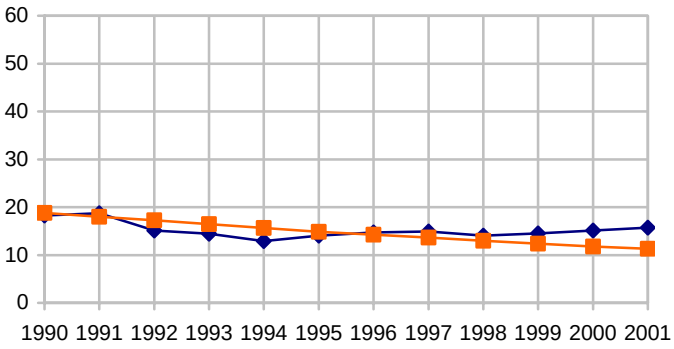
EXP - Education expenditure per capita, PPP (current international $)

ILL - Illiteracy rate, % of 15 - 24 years old

| Year | EXP | ILL |
|---|---|---|
| 1990 | 30 | 30 |
| 1991 | 31 | 29 |
| 1992 | 32 | 28 |
| 1993 | 35 | 27 |
| 1994 | 20 | 26 |
| 1995 | 22 | 25 |
| 1996 | 24 | 25 |
| 1997 | 24 | 24 |
| 1998 | 24 | 23 |
| 1999 | 26 | 22 |
| 2000 | 27 | 21 |
| 2001 | 28 | 21 |

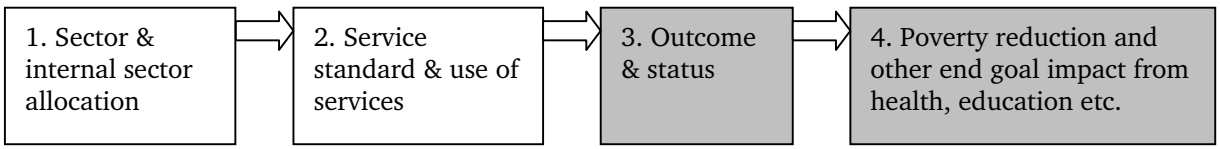


| g. Zambia | Year | EXP | ILL |
|---|---|---|---|
| EXP - Education expenditure per capita, PPP (current international $) | 1990 | 18 | 19 |
| | 1991 | 19 | 18 |
| | 1992 | 15 | 17 |
| | 1993 | 14 | 16 |
| | 1994 | 13 | 16 |
| | 1995 | 14 | 15 |
| | 1996 | 15 | 14 |
| | 1997 | 15 | 14 |
| | 1998 | 14 | 13 |
| | 1999 | 14 | 12 |
| | 2000 | 15 | 12 |
| ILL - Illiteracy rate, % of 15 - 24 years old | 2001 | 16 | 11 |




The general pattern fulfilled the expected results with an increase in expenditures for the education sector and a decrease in illiteracy rates for most countries, except for Uganda and Zambia. It should be noted that the illiteracy rate decreased steadily at different rates but the development in expenditures behaved in a more erratic manner.

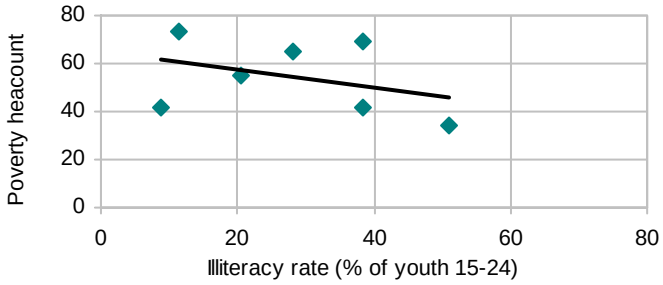
### 5.8.4. Outcome-impact education sector




For this relationship, the outcome measured by illiteracy rate for 15-25 years old is expected to have a direct relationship with impact (measured by poverty incidence). The expectation is that low illiteracy rates correspond to low poverty incidence or a positive relationship

**5.44. Outcome - impact in education sector in Norwegian partner countries**

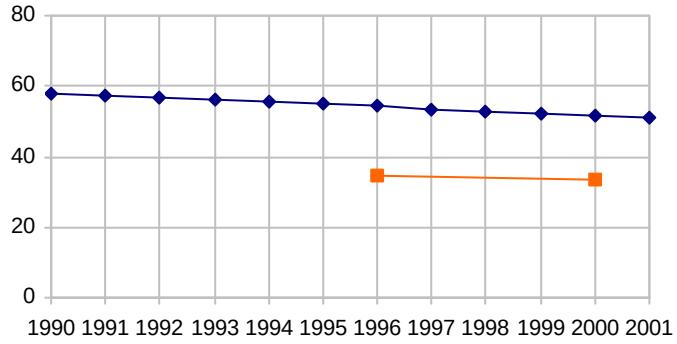
| | Country | ILL | POV |
|---|---|---|---|
| ILL-Illiteracy rate, youth total (% of people ages 15-24) & & POV-Extreme poverty incidence, latest (% under one $ a day), lastest reported. | Bangladesh | 51 | 34 |
| | Malawi | 28 | 65 |
| | Mozambique | 38 | 69 |
| | Nepal | 38 | 42 |
| | Tanzania | 9 | 42 |
| | Uganda | 21 | 55 |
| | Zambia | 11 | 73 |



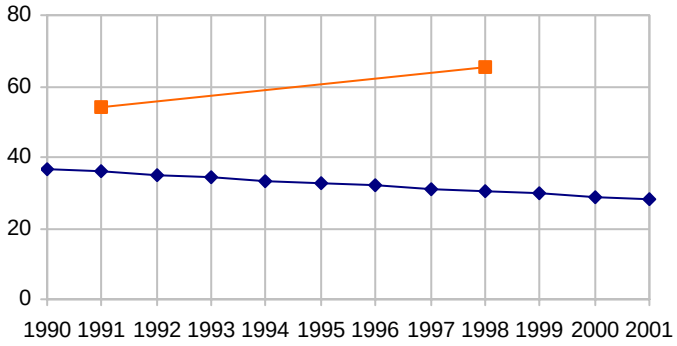

Again the literacy rate does not show the expected relationship . For data reported in 2003 from the Norwegian partner countries, the trend is very weak, but high illiteracy rates correspond to low poverty levels, indicating that there are other factors affecting poverty.

**5.45. Outcome - impact in education sector for each Norwegian partner country**

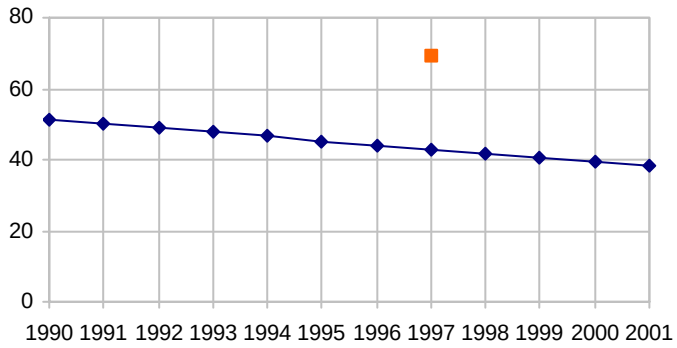
| **a. Bangladesh** | Year | ILL | POV |
|---|---|---|---|
| ILL - Illiteracy rate, % of 15 - 24 years old | 1990 | 58 | .. |
| | 1991 | 57 | .. |
| | 1992 | 57 | .. |
| | 1993 | 56 | .. |
| | 1994 | 56 | .. |
| | 1995 | 55 | .. |
| POV - National poverty incidence (% under national poverty line) | 1996 | 54 | 34 |
| | 1997 | 54 | .. |
| | 1998 | 53 | .. |
| | 1999 | 52 | .. |
| | 2000 | 52 | 34 |
| | 2001 | 51 | .. |



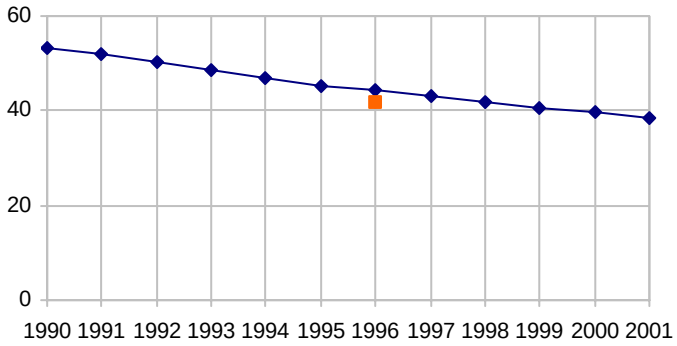

| **b. Malawi** | Year | ILL | POV |
|---|---|---|---|
| ILL - Illiteracy rate, % of 15 - 24 years old | 1990 | 37 | .. |
| | 1991 | 36 | 54 |
| | 1992 | 35 | .. |
| | 1993 | 34 | .. |
| | 1994 | 33 | .. |
| | 1995 | 33 | .. |
| POV - National poverty incidence (% under national poverty line) | 1996 | 32 | .. |
| | 1997 | 31 | .. |
| | 1998 | 30 | 65 |
| | 1999 | 30 | .. |
| | 2000 | 29 | .. |
| | 2001 | 28 | .. |



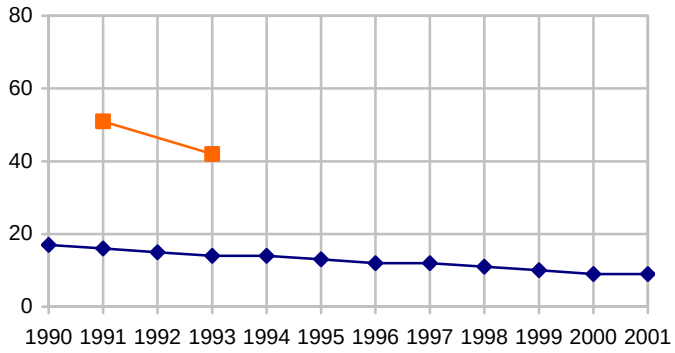

| **c. Mozambique** | Year | ILL | POV |
|---|---|---|---|
| ILL - Illiteracy rate, % of 15 - 24 years old | 1990 | 51 | .. |
| | 1991 | 50 | .. |
| | 1992 | 49 | .. |
| | 1993 | 48 | .. |
| | 1994 | 46 | .. |
| | 1995 | 45 | .. |
| POV - National poverty incidence (% under national poverty line) | 1996 | 44 | .. |
| | 1997 | 43 | 69 |
| | 1998 | 42 | .. |
| | 1999 | 41 | .. |
| | 2000 | 39 | .. |
| | 2001 | 38 | .. |



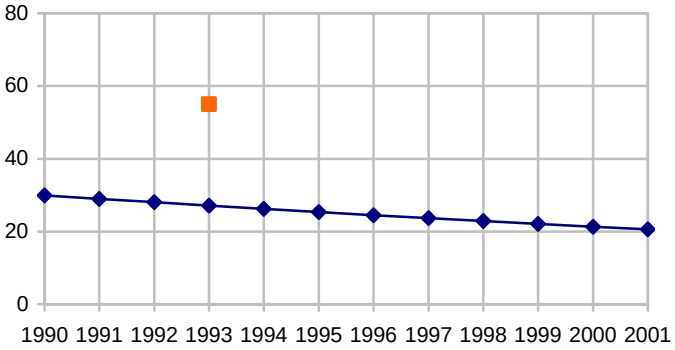

| **c. Nepal** | Year | ILL | POV |
|---|---|---|---|
| ILL - Illiteracy rate, % of 15 - 24 years old | 1990 | 53 | .. |
| | 1991 | 52 | .. |
| | 1992 | 50 | .. |
| | 1993 | 49 | .. |
| | 1994 | 47 | .. |
| | 1995 | 45 | .. |
| POV - National poverty incidence (% under national poverty line) | 1996 | 44 | 42 |
| | 1997 | 43 | .. |
| | 1998 | 42 | .. |
| | 1999 | 41 | .. |
| | 2000 | 40 | .. |
| | 2001 | 38 | .. |



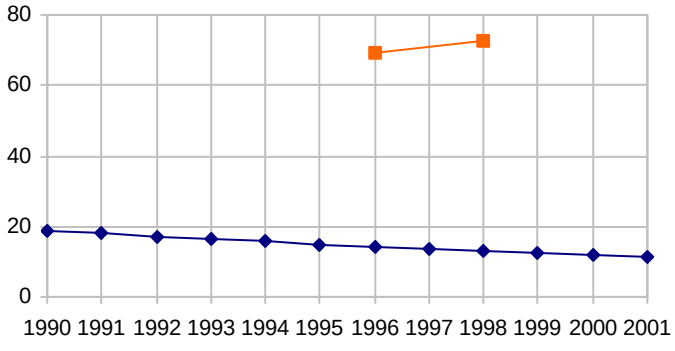
| **e. Tanzania** | Year | ILL | POV |
|---|---|---|---|
| ILL - Illiteracy rate, % of 15 - 24 years old | 1990 | 17 | |
| | 1991 | 16 | 51 |
| | 1992 | 15 | |
| | 1993 | 14 | 42 |
| | 1994 | 14 | |
| POV - National poverty incidence (% under national poverty line) | 1995 | 13 | |
| | 1996 | 12 | |
| | 1997 | 12 | |
| | 1998 | 11 | |
| | 1999 | 10 | |
| | 2000 | 9 | |
| | 2001 | 9 | |




| **f. Uganda** | Year | ILL | POV |
|---|---|---|---|
| ILL - Illiteracy rate, % of 15 - 24 years old | 1990 | 30 | .. |
| | 1991 | 29 | .. |
| | 1992 | 28 | .. |
| | 1993 | 27 | 55 |
| | 1994 | 26 | .. |
| POV - National poverty incidence (% under national poverty line) | 1995 | 25 | .. |
| | 1996 | 25 | .. |
| | 1997 | 24 | .. |
| | 1998 | 23 | .. |
| | 1999 | 22 | .. |
| | 2000 | 21 | .. |
| | 2001 | 21 | .. |



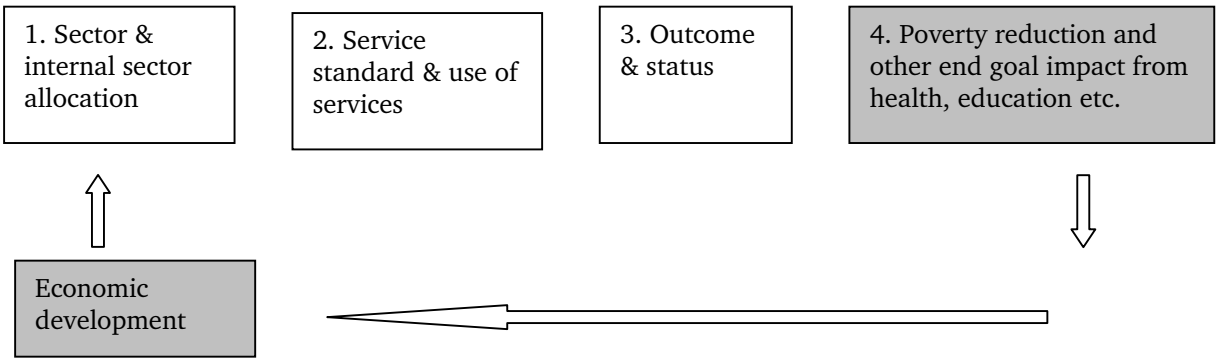

| **g. Zambia** | Year | ILL | POV |
|---|---|---|---|
| ILL - Illiteracy rate, % of 15 - 24 years old | 1990 | 19 | .. |
| | 1991 | 18 | .. |
| | 1992 | 17 | .. |
| | 1993 | 16 | .. |
| | 1994 | 16 | .. |
| POV - National poverty incidence (% under national poverty line) | 1995 | 15 | .. |
| | 1996 | 14 | 69 |
| | 1997 | 14 | .. |
| | 1998 | 13 | 73 |
| | 1999 | 12 | .. |
| | 2000 | 12 | .. |
| | 2001 | 11 | .. |




There is a steady decline in illiteracy rate for all countries but it is difficult to test the impact on poverty since poverty incidence data are only available for one or two years. Poverty rates were available for two points in time in Bangladesh, Malawi, Tanzania and Zambia. When illiteracy decreased, poverty rates fell accordingly in Bangladesh and Tanzania, but increased in Malawi and Zambia. Further data are indeed needed to follow a possible impact.

## 5.9. Feed back, human end goal achievements towards economic development

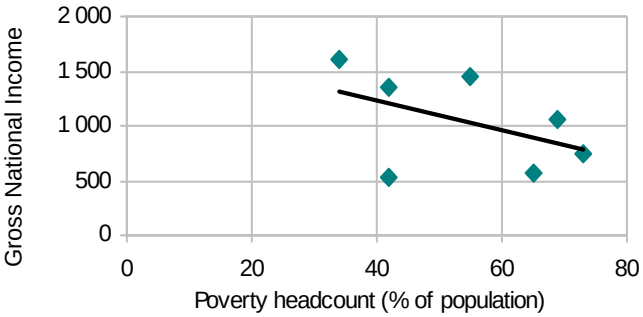
### 5.9.1. Impact-economic development feedback for Norwegian partner countries




The desired impact of all inputs (investment in the different sectors) is poverty reduction and with the goal of spreading the effects of these investment. For this link the purpose is to show how poverty change is distributed amongst the population (seen through gross national income (GNI) per capita).

**5.46. End goal - economic development feed back in Norwegian partner countries**

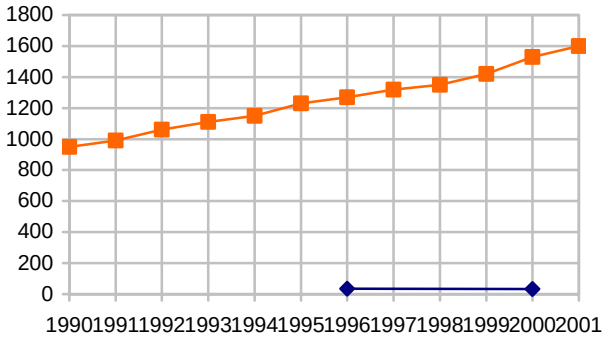
| | Country | POV | GNI |
|---|---|---|---|
| POV- Poverty headcount, national (% of population) & GNI-Gross national income per capita, PPP(current international $), latest reported. | Bangladesh | 34 | 1 600 |
| | Malawi | 65 | 560 |
| | Mozambique | 69 | 1 050 |
| | Nepal | 42 | 1 360 |
| | Tanzania | 42 | 520 |
| | Uganda | 55 | 1 460 |
| | Zambia | 73 | 750 |



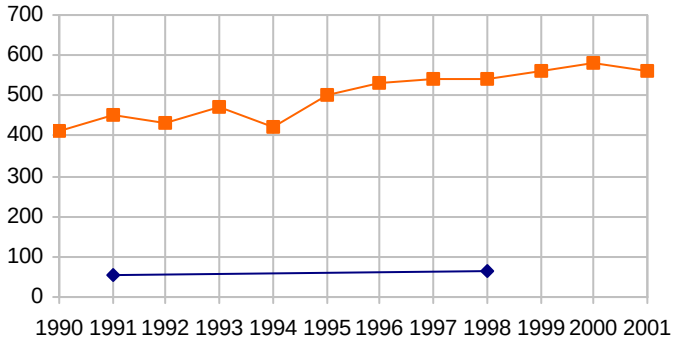

As you would expect, reduced poverty is followed by economic development and increased GNI. The above shows that low poverty rates (% living under 1 dollar a day) are followed by high GNI, but also that there are large variations in GNI per capita for both high and low poverty levels.

**5.47. End goal - economic development feed back in Norwegian partner countries**

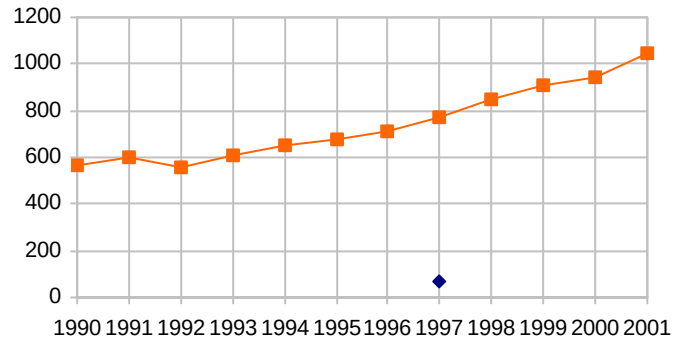
| a. Bangladesh | Year | POV | GNI |
|---|---|---|---|
| POV - National poverty incidence (% under national poverty line) | 1990 | .. | 950 |
| | 1991 | .. | 990 |
| | 1992 | .. | 1060 |
| | 1993 | .. | 1110 |
| | 1994 | .. | 1150 |
| | 1995 | .. | 1230 |
| | 1996 | 340 | 1270 |
| GNI per capita, PPP (current international $) | 1997 | .. | 1320 |
| | 1998 | .. | 1350 |
| | 1999 | .. | 1420 |
| | 2000 | 340 | 1530 |
| | 2001 | .. | 1600 |



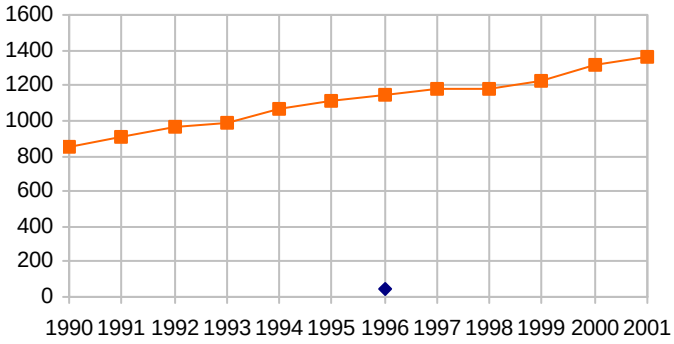
| **b. Malawi** | Year | POV | GNI |
|---|---|---|---|
| | 1990 | .. | 410 |
| POV - National | 1991 | 540 | 450 |
| poverty incidence (% | 1992 | .. | 430 |
| under national poverty | 1993 | .. | 470 |
| line) | 1994 | .. | 420 |
| | 1995 | .. | 500 |
| | 1996 | .. | 530 |
| GNI per capita, PPP | 1997 | .. | 540 |
| (current international | 1998 | 650 | 540 |
| $) | 1999 | .. | 560 |
| | 2000 | .. | 580 |
| | 2001 | .. | 560 |



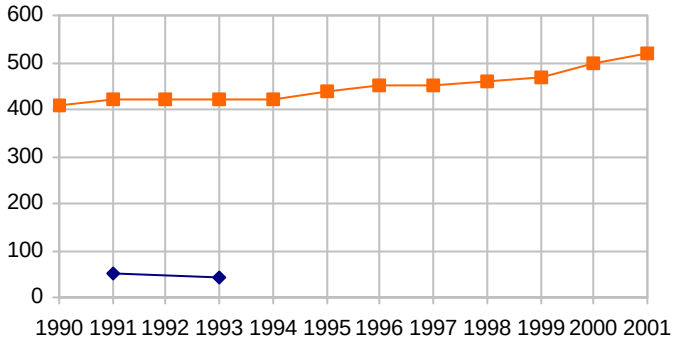

| **c. Mozambique** | Year | POV | GNI |
|---|---|---|---|
| | 1990 | .. | 570 |
| POV - National | 1991 | .. | 600 |
| poverty incidence (% | 1992 | .. | 560 |
| under national poverty | 1993 | .. | 610 |
| line) | 1994 | .. | 650 |
| | 1995 | .. | 680 |
| | 1996 | .. | 710 |
| GNI per capita, PPP | 1997 | 690 | 770 |
| (current international | 1998 | .. | 850 |
| $) | 1999 | .. | 910 |
| | 2000 | .. | 940 |
| | 2001 | .. | 1050 |



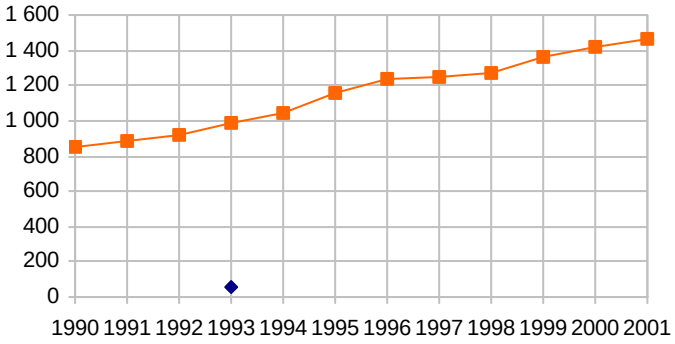

| **d. Nepal** | Year | POV | GNI |
|---|---|---|---|
| | 1990 | .. | 850 |
| POV - National | 1991 | .. | 910 |
| poverty incidence (% | 1992 | .. | 960 |
| under national poverty | 1993 | .. | 990 |
| line) | 1994 | .. | 1070 |
| | 1995 | .. | 1110 |
| | 1996 | 420 | 1150 |
| GNI per capita, PPP | 1997 | .. | 1180 |
| (current international | 1998 | .. | 1180 |
| $) | 1999 | .. | 1230 |
| | 2000 | .. | 1320 |
| | 2001 | .. | 1360 |



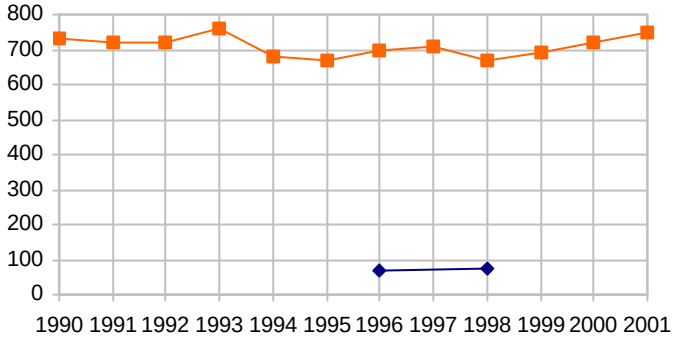

| **e. Tanzania** | Year | POV | GNI |
|---|---|---|---|
| | 1990 | .. | 410 |
| POV - National | 1991 | 510 | 420 |
| poverty incidence (% | 1992 | .. | 420 |
| under national poverty | 1993 | 420 | 420 |
| line) | 1994 | .. | 420 |
| | 1995 | .. | 440 |
| | 1996 | .. | 450 |
| GNI per capita, PPP | 1997 | .. | 450 |
| (current international | 1998 | .. | 460 |
| $) | 1999 | .. | 470 |
| | 2000 | .. | 500 |
| | 2001 | .. | 520 |



| f. Uganda | Year | POV | GNI |
|---|---|---|---|
| | 1990 | | 850 |
| POV - National poverty incidence (% under national poverty line) | 1991 | | 890 |
| | 1992 | | 920 |
| | 1993 | 550 | 990 |
| | 1994 | | 1040 |
| | 1995 | | 1160 |
| | 1996 | | 1240 |
| GNI per capita, PPP (current international $) | 1997 | | 1250 |
| | 1998 | | 1270 |
| | 1999 | | 1360 |
| | 2000 | | 1420 |
| | 2001 | | 1460 |




| g. Zambia | Year | POV | GNI |
|---|---|---|---|
| | 1990 | | 730 |
| POV - National poverty incidence (% under national poverty line) | 1991 | | 720 |
| | 1992 | | 720 |
| | 1993 | | 760 |
| | 1994 | | 680 |
| | 1995 | | 670 |
| | 1996 | 690 | 700 |
| GNI per capita, PPP (current international $) | 1997 | | 710 |
| | 1998 | 730 | 670 |
| | 1999 | | 690 |
| | 2000 | | 720 |
| | 2001 | | 750 |




There was a general increase in GNI all the countries through the years, with the exception of Malawi where there was a slight variation in the GNI from 1991to 1994. However the relationships are hard to comment upon because of missing data and few national poverty incidence rate data for all the countries in the study. The links could have been better shown if there were more poverty data available.

## 5.10. A general note regarding statistical data gathered

This portion of the report takes a closer look into the data sets gathered. The data source for this report is the World Development Indicators reports published by the World Bank. There are differences in the data between World Development Indicators from reporting years and are as follows:

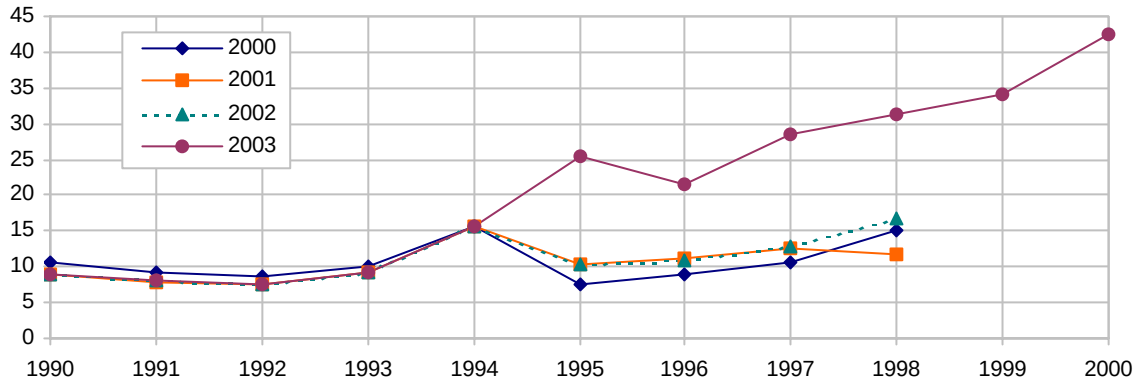
- There can be data available for one report but missing values for the other report and vice versa.
- Values can be totally different and the differences can be double or triple the original value. Some of these differences can be explained by a change in the computation for PPP$.
- The trends can move in opposite directions. There are two plausible explanations for this phenomenon. The first reason is due to the data revisions[24] undertaken by the World Bank and other agencies. These revisions are done if past data published are assessed to be of low quality. The second reason can be connected to population estimates. Past estimates of per capita data can change drastically due to changes in population estimates.

### 5.10.1.Public health expenditures

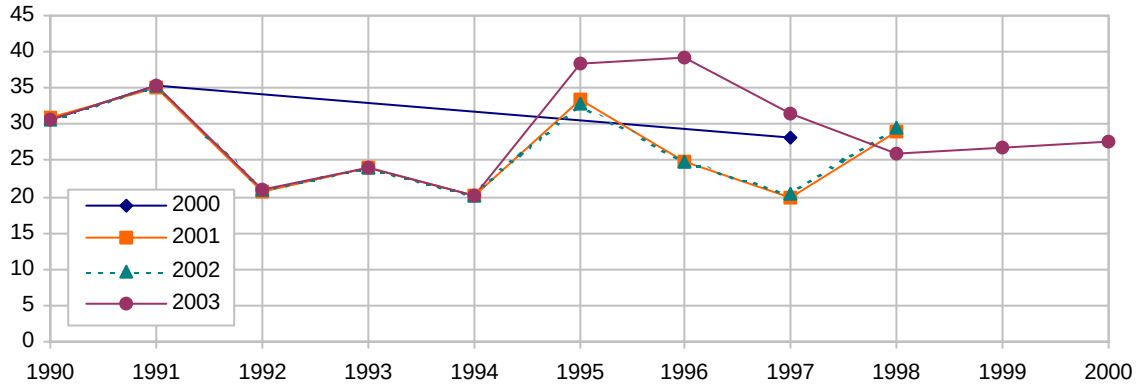
We present two typical - not extreme - cases from the health sector, one addressing a measure in money terms and one in rates.

[24] More details about the revision process is discussed in 5.11.

**5.48. Public Health Expenditures as % of government consumption expenditures for each of four reporting years 2000-2003, Tanzania**

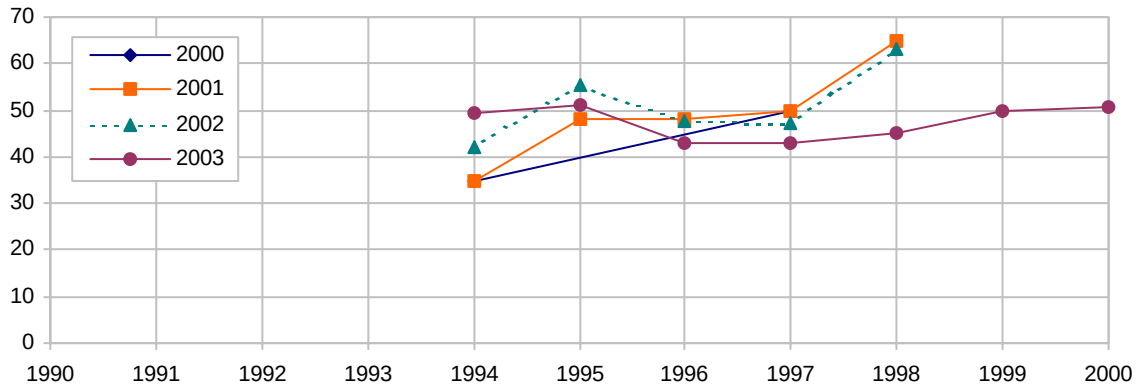



**5.49. Public Health Expenditures as % of government consumption expenditures for each of four reporting years 2000-2003, Mozambique**

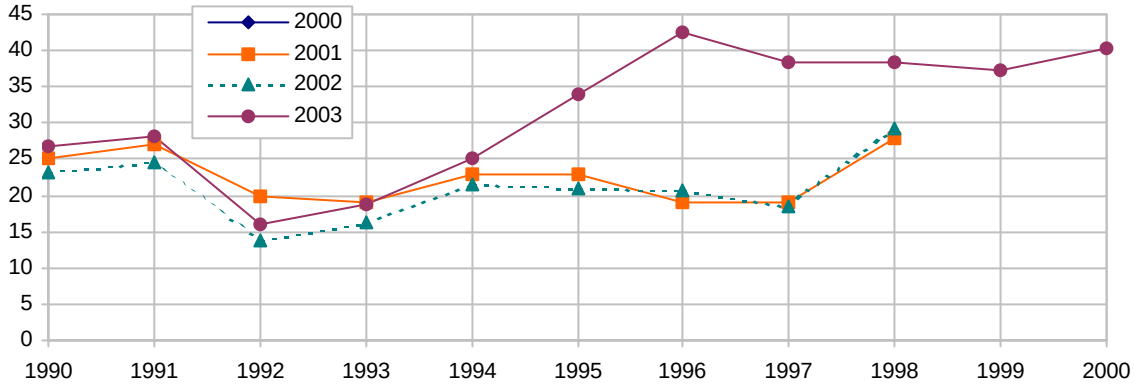



*Public Health Expenditures as % of government consumption expenditures*: Public health expenditures are presented country-wise for four consecutive years in each of the 4 main Norwegian partner countries. The cases of Tanzania and Mozambique are interesting. Tanzania belonged to the lower case in 2000 report but with latest figures, the country moved to the upper case, with an exceptional rate of increase (figure 5.48). Data for Mozambique also fluctuated and we see different directions for example between 1995 and 1996 and between 1997 and 1998 (figure 5.49).

**5.50. Health Expenditures per capita, PPP (current international $) for each of four reporting years, Uganda**



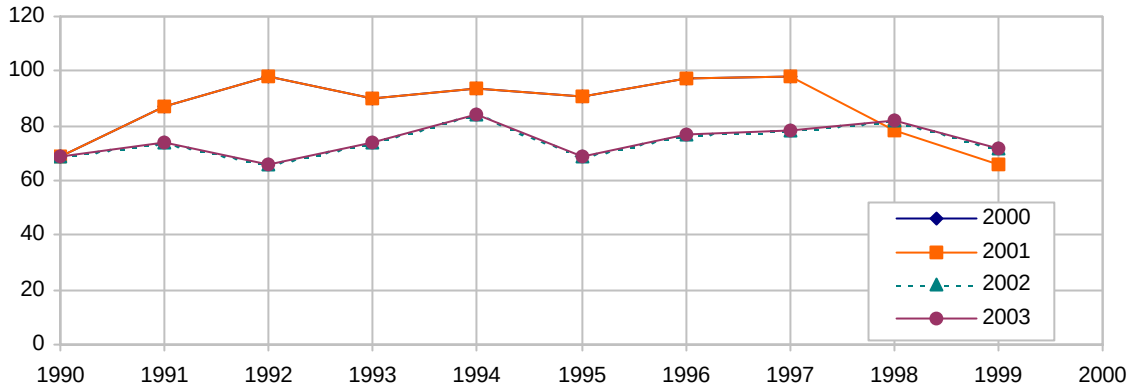
**5.51. Health Expenditures per capita, PPP (current international $) for each of four reporting years, Mozambique**



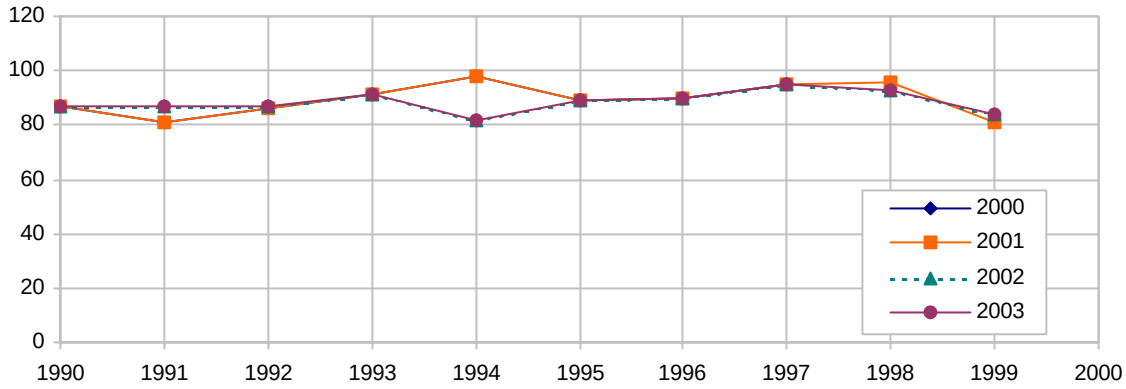

*Health expenditure per capita*: For Uganda the rate of trend changed after 1997 (figure 5.50) while for Mozambique, the data for 2003 deflected from the report in earlier years after 1994 (figure 5.51). Data for the last the remaining countries show similar large discrepancies.

## 5.10.2.Immunisation and mortality rates

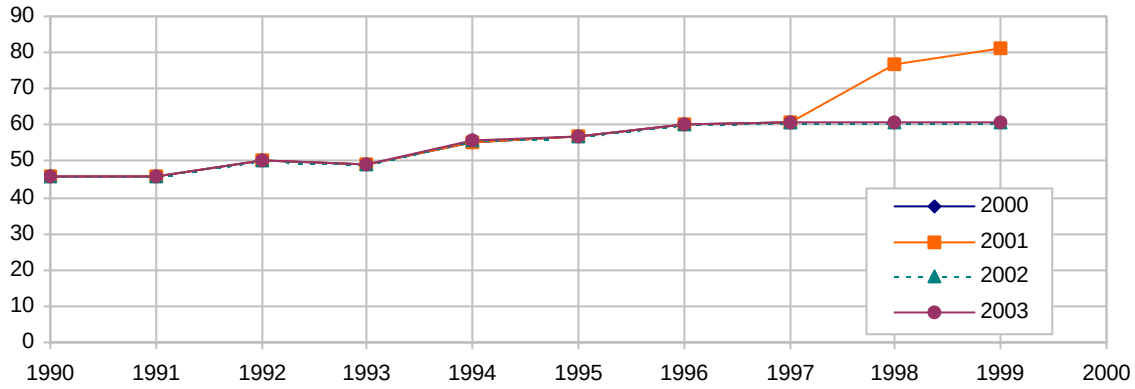
**5.52. Immunisation data for each of four reporting years, Bangladesh**



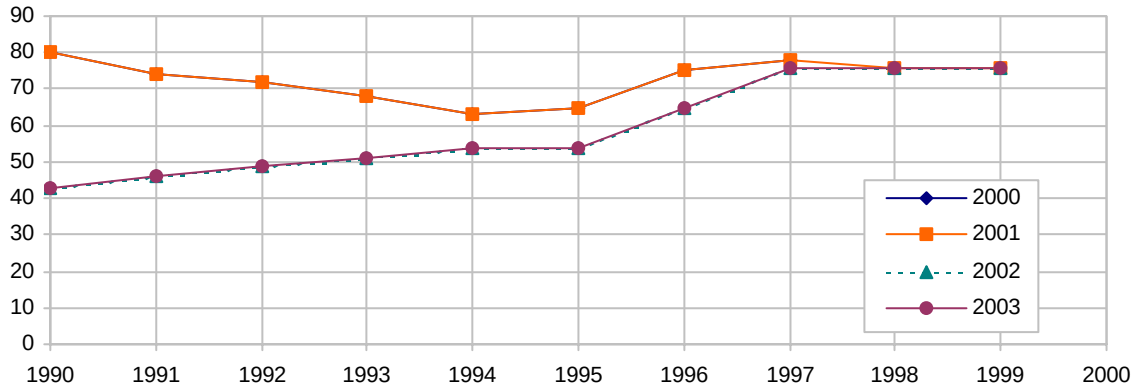

**5.53. Immunisation data for each of four reporting years, Malawi**



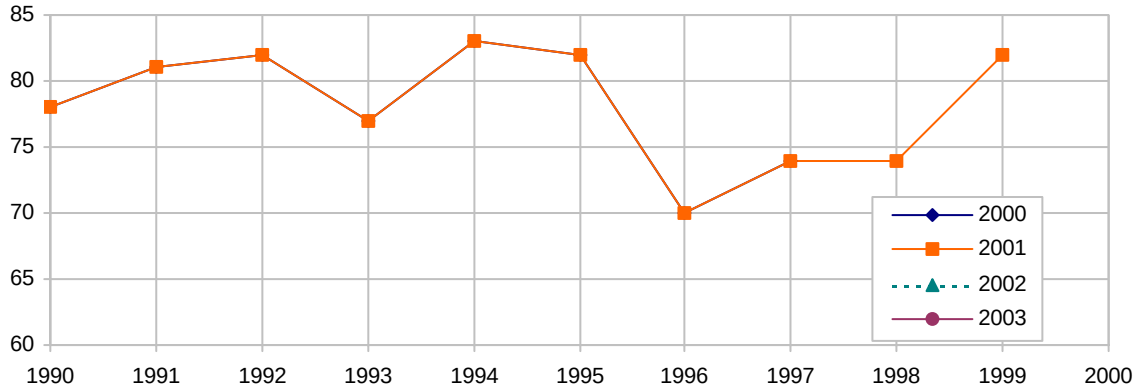
**5.54. Immunisation data for each of four reporting years, Mozambique**



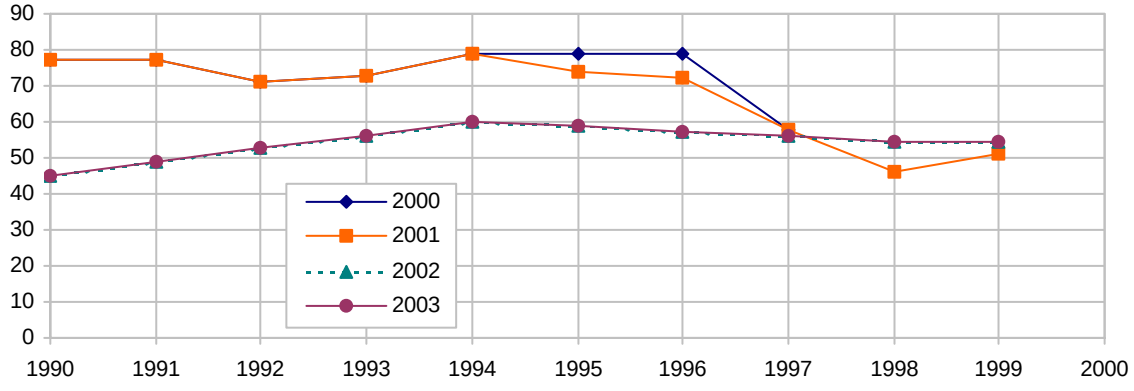

**5.55. Immunisation data for each of four reporting years, Nepal**



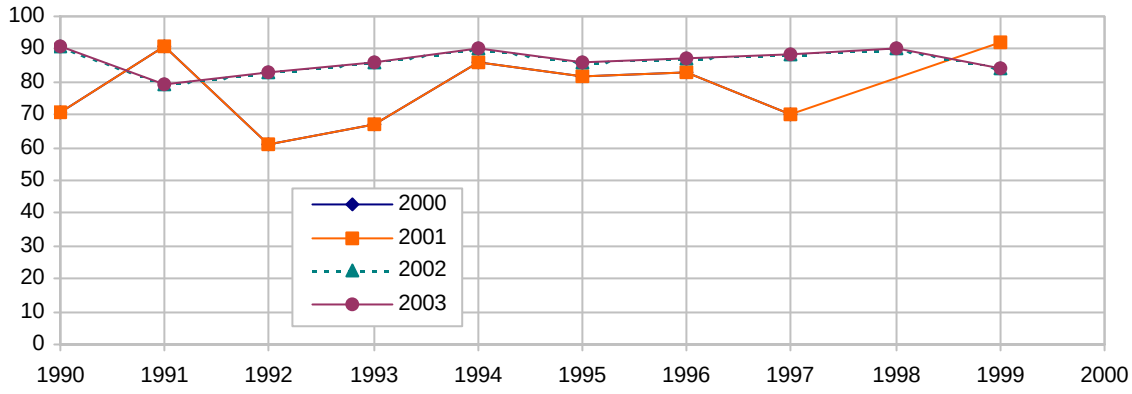

**5.56. Immunisation data for each of four reporting years, Tanzania**




**5.57. Immunisation data for each of four reporting years, Uganda**



**5.58. Immunisation data for each of four reporting years, Zambia**



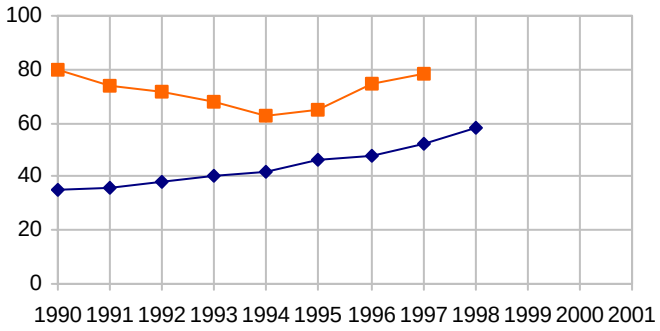

We choose to present data on immunisation figures for all the NORAD partner countries (see figures 5.52--5.58.). There is no pattern in the changes for the different countries and different years. For Malawi, Uganda, and Zambia there are different trends and missing values. Malawi, Mozambique and Nepal showed different trends in selected years and missing data while Tanzania had data only for 2001.

### 5.10.3. Impact on interpretation of relationships

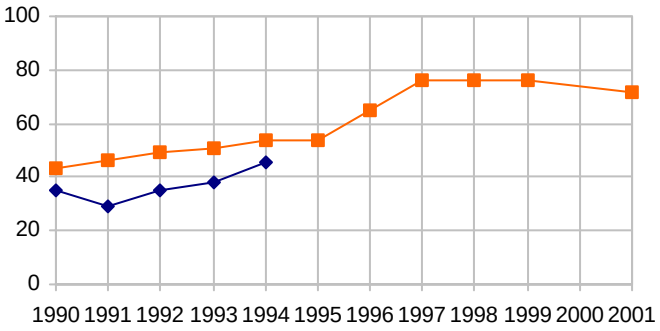
Since data for each level changes, users of World Development Indicators data need to be careful when interpreting co variation or lack of co variation. The following joint presentation of two and two variables may indicate the lack of consistency. Again the cases presented are not extremes in either direction. Look at the examples from Nepal and Zambia wherein input and output relationships were compared (figures 5.59 and 5.60).

**5.59. Input and output in health sector, Nepal.**

| a. Nepal 2000 | Year | EXP | IMM |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 35 | 80 |
| | 1991 | 36 | 74 |
| | 1992 | 38 | 72 |
| | 1993 | 40 | 68 |
| | 1994 | 42 | 63 |
| | 1995 | 46 | 65 |
| | 1996 | 48 | 75 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 52 | 78 |
| | 1998 | 58 | |
| | 1999 | | |
| | 2000 | | |
| | 2001 | | |



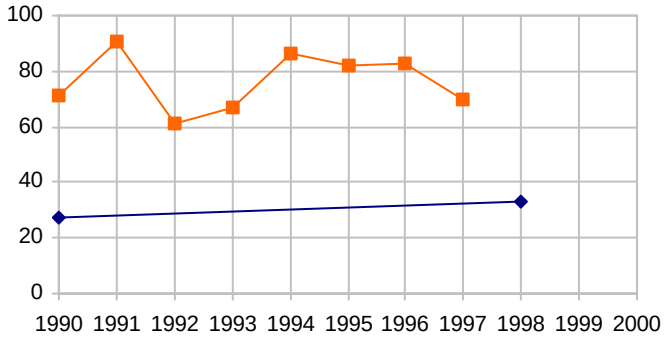

| b. Nepal 2003 | Year | EXP | IMM |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 35 | 43 |
| | 1991 | 29 | 46 |
| | 1992 | 35 | 49 |
| | 1993 | 38 | 51 |
| | 1994 | 46 | 54 |
| | 1995 | 65 | 54 |
| | 1996 | 75 | 65 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 78 | 76 |
| | 1998 | | 76 |
| | 1999 | | 76 |
| | 2000 | | |
| | 2001 | | 72 |



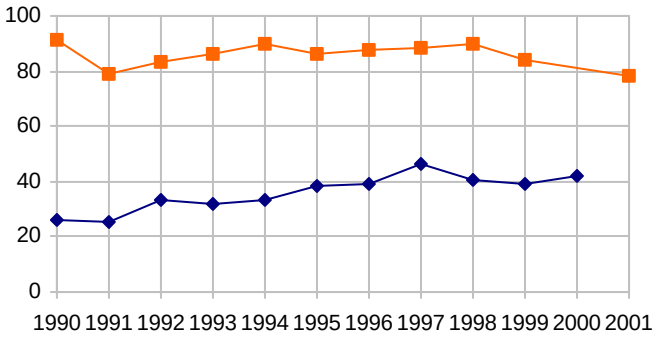
Nepal's input and output data for 2000 and 2003 showed different trends and missing data. Nepal's health expenditure for 2000 before 1995 increased together with immunisation rates, but after 1995 the increase in health budget corresponded to increase in immunisation. However for the data reported in 2003 WDI, Nepal's immunisation rates increased together with the health budget from 1992 to 1995 but there was missing data on immunisation data after 1997. Was there a decrease or an increase in the health expenditure per capita before 1995? Why were data for health expenditures per capita not recorded for the data reported in 2003 WDI? These are some of the challenges when faced with such discrepancies.

**5.60. Input and output in health sector, Zambia**

| a. Zambia 2000 | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | 27 | 71 |
| EXP - Health expenditure per capita, PPP (current international $) | 1991 | .. | 91 |
| | 1992 | .. | 61 |
| | 1993 | .. | 67 |
| | 1994 | .. | 86 |
| | 1995 | .. | 82 |
| | 1996 | .. | 83 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | .. | 70 |
| | 1998 | 33 | |
| | 1999 | | |
| | 2000 | | |
| | 2001 | | |



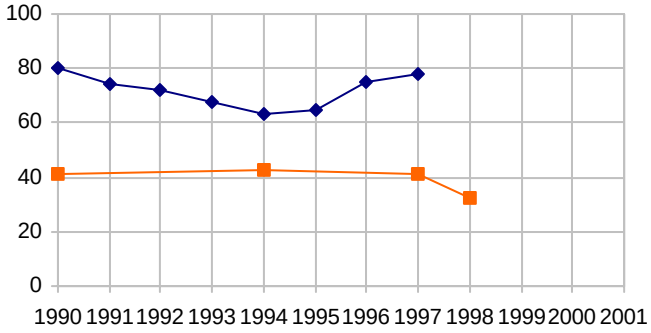

| b. Zambia 2003 | Year | EXP | IMM |
|---|---|---|---|
| | 1990 | 26 | 91 |
| EXP - Health expenditure per capita, PPP (current international $) | 1991 | 25 | 79 |
| | 1992 | 33 | 83 |
| | 1993 | 32 | 86 |
| | 1994 | 33 | 90 |
| | 1995 | 38 | 86 |
| | 1996 | 39 | 87 |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 46 | 89 |
| | 1998 | 41 | 90 |
| | 1999 | 39 | 84 |
| | 2000 | 42 | .. |
| | 2001 | .. | 78 |



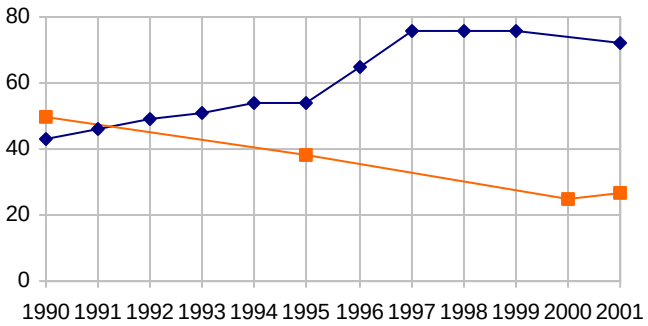

Zambia's input-output relationship showed even larger data gaps for 2000 and 2003. Health expenditure did not have any relationship with immunisation rate in the 2000 report. Closer look into the data reported in 2003 WDI showed immunisation rates from 1990-1999 whereas it was missing in the 2000 report.

**5.61. Output-outcome in health sector, Nepal**

| a. Nepal 2000 | Year | IMM | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 80 | 41 |
| | 1991 | 74 | .. |
| | 1992 | 72 | .. |
| | 1993 | 68 | .. |
| | 1994 | 63 | 42 |
| | 1995 | 65 | .. |
| | 1996 | 75 | .. |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 78 | 41 |
| | 1998 | | 32 |
| | 1999 | | |
| | 2000 | | |
| | 2001 | | |



| b. Nepal 2003 | Year | IMM | MORT |
|---|---|---|---|
| EXP - Health expenditure per capita, PPP (current international $) | 1990 | 43 | 50 |
| | 1991 | 46 | .. |
| | 1992 | 49 | .. |
| | 1993 | 51 | .. |
| | 1994 | 54 | .. |
| | 1995 | 54 | 38 |
| | 1996 | 65 | .. |
| IMM - Immunisation, DPT (% of children under 12 months) | 1997 | 76 | .. |
| | 1998 | 76 | .. |
| | 1999 | 76 | .. |
| | 2000 | .. | 25 |
| | 2001 | 72 | 27 |




Interesting to look at also are relationships between output and outcome in Nepal (figures 5.61-5.62). In this case, values for immunisation and health expenditure per capita have not only changed, but also moved in different directions. Hence the relationship also changed.

### 5.10.4. Education, water and sanitation sector

Generally we found the education data more robust when we looked at the 2000 and 2003 data compared to the health data. But still Uganda and Tanzania showed different trends in the years between 1993-1995. Though the education data is robust, there were still a number of missing variables in public education expenditures, school enrolment, and illiteracy rates (from 1999 to 2001) for all countries. As already presented, data for the water and sanitation sector are scarcer. But still we can see that both data and trends are changing over those four years.

### 5.10.5. Poverty data

Poverty data were also scarce and too few to assess for trends. There were no data for 2000 on poverty headcount. GNI per capita data from 1999-2001 were missing.

## 5.11. An endnote

The purpose of this section is to present the challenges in using international data sets so that policy makers and the general public are aware of the processes and issues behind *published* figures.

It is important to note that the World Bank is not the primary source of the data but presents data gathered from different agencies. The PPP GNI per capita for Uganda and Mozambique were based on estimates derived from regressions done by WB personnel. These estimates are affected by changes in national account estimates of gross national income per capita. Data on child mortality rate (ages 1-5) years come from surveys and vital registrations systems and mortality rates are from the World Bank's Health, Nutrition and Population group. Poverty headcount estimates are produced by the World Banks Research Department.

The rest of the indicators are from other agencies. Health, water and sanitation data are from WHO and UNICEF. World Bank does not calculate "Public health expenditure as % of government consumption expenditure" and WB stopped publishing "health expenditure per capita (PPP)" after WDI 2001. World Bank publishes "Public health expenditures (as % of GDP)" and "health expenditure per capita" from WHO. Education indicators are from UNESCO'S Institute of Statistics.

Parallel to World Bank yearly revisions, other UN agencies are also undertaking revisions. UNICEF and WHO are currently working at harmonisation data that is part of a wider movement amongst UN agencies to adopt a single set of demographic and health estimates for use in measuring and monitoring progress towards the Millennium Development Goals. WHO is re-estimating its historical series (1990-1996) thus the World Bank has been requested to only report on health expenditures from 1997 onwards. For the education data, UNESCO'S Institute for Statistics has updated their series. According to a World Bank source[25], time series data are updated and can change either through new data gathered (from surveys which the Bank undertakes) or because of new interpretations of the indicator to ensure consistency. It was noted that in updating World Development Indicators data, the World Bank updates the entire time series rather than adding the new points to the existing series, which allows for the inclusion of updates and revisions.

We do not know how long or effective the harmonisation efforts will be, but one thing that is clear is that we cannot wait for the process to end before we can use these data sets. In the future, there will be for sure continuous changes in the international data sets if the harmonisation efforts are not successful. The issue of coming up with a common set of indicators is currently being debated. Different

[25] Personal communications, Shaida Baidee, Director of the Development Data Group, World Bank, May 10, 2004.

agencies have different visions and expectations thus the resistance to the idea of a common international data set. Having said this, it is therefore important to balance changes from the top, by investing in the development of statistics, especially poverty monitoring systems at the country level. Current related issues related to poverty indicators and monitoring systems are the development of an international standard and development of non-government agencies capabilities to monitor the poverty reduction process as well. In the meantime all these issues and processes should not paralyse policy makers and the general public from using available data. For the purposes of this report, we based our data on the 2003 World Development Indicators report.

# 6. Conclusions and recommendations

The main objective of this project is to demonstrate how a statistical system for tracking resource and policy impact could be designed and implemented. The statistical system presented is designed to provide statistical information both the MDGs, for the PRSPs and for other impact of resource and policy decisions meeting the data challenge from PARIS21. A prerequisite was to follow international standards for collection, processing and dissemination of information. The approach presented follows the process from resource allocation towards human welfare and quality of life and the feedback towards economic and social development. The statistical approach developed incorporates MDG indicators and provides for PRSP monitoring in three social sectors, education, health and water and sanitation and are aimed to include smallholder agriculture and urban informal sector.

In the following paragraphs we present some empirical findings, a discussion on data availability and some recommendations for the future implementation of similar statistical systems.

## 6.1. Empirical findings

*For the health sector* resource allocation as percent of government recurrent expenditures and per capita fluctuated from 1990-2001but generally showing an increase over time. Input to the health sector resulted in increased level of output (DPT immunisation) as expected except for Bangladesh and Zambia. Output on the other hand resulted in a general decrease in mortality (outcome) as expected but Tanzania lack immunisation data. On the relationship of input and outcome, only Bangladesh, Mozambique and Nepal showed the expected results with increase in input in the health sector corresponding to a decline in mortality. Lack of poverty data stopped us from following the outcome - impact relationships.

*For the education sector* resource allocation, Asian countries topped the list of commitments for social sector allocation. However,though there was an increase in enrolment (output) with an increase in input, the relationship is not so clear. Malawi had a clear jump in enrolment rates from 1993-1994. Based on available data, an increase in enrolment showed a decrease in illiteracy rate. Looking at country data, input to the education sector showed the expected outcome (decrease in illiteracy rate) with the exception of Uganda and Zambia. Again, the lack of poverty data stopped us from following the outcome - impact relationships.

*For water and sanitation sector*, there was no data on resource allocation. Available data showed that amongst Norwegian partner countries, more Asians had access to safe water compared to African but more Africans had access to safe sanitation than the Asians. Two and two monitoring steps were not done for water and sanitation sector due to lack of data.

As for all trend statistics, each statistical table present a documentation of levels and trends across time or across countries. Stable policy trends are reflected in stable data trends, while important policy changes e.g. at the change of government or large single policy changes such as decentralization, are reflected in smaller or larger breaks in the old trends.

When taking a step further, by presenting data chains like these, the reader might expect data to be equally easy to interpret and look for figures which can support expected effects even when just a few data are presented at each step in the chain. We would however argue that the lack of expected effects are almost equally interesting. If increased resources for the health sector do not increase vaccination rates or if increased vaccination rates do not reduce child mortality, it is essential to check out the process in order to increase efficiency and equity of resource distribution and policy implementation.

Across these three sectors the reader gets just this dual impression. In general, the figures show that increased inputs yield increased output and that both inputs and outputs yield increased outcome. But in a number of cases the reader will not be able to find the expected link and in a few cases even opposite trends. This might reflect that a number of other unaccounted

variables have changed in different directions, but also a less than proper implementation. In a number of cases the lack of expected trends are reviewed in the text. They are often due to important changes in data trends which reflect important policy changes e.g. a new government with new policy or a decentralization process at country level which often might reduce the expected effect of certain inputs. With our limited country specific knowledge there are also numerous data trends we are not able to explain, but which would be a valuable starting point for a country sector expert.

### 6.2. Data availability

Generally, there were substantial data gaps, but it is still possible to compile and present data for the main variables at each of input, output and outcome level for these three sectors. Poverty data were however in many countries only available at one point in time and hence did not allow following trends nor to compare outcome and impact.

For the sectors there were data gaps especially for resource-allocation from the NGO and private sectors, mortality, enrolment, and for the water and sanitation sector in general. For the smallholder agriculture and urban informal sectors the lack of data was so large that we decided not to present the data fragments which were available.

Using available international data offered an additional challenge, with past and present harmonisation efforts from international agencies affecting values in published data sets. The issue of a common set of indicators is still being debated and will remain a big challenge even in the future.

### 6.3. Data access in the online age

We chose the World Bank World Development Indicator database as the main source of data for this report. As referred they present a mixture of data received from NSIs, sector statistical institutes as UIS (data would then already have been scrutinised and possibly adjusted by UIS), and data scrutinised and possibly adjusted by World Bank staff. WDI follows another policy than NSIs by adjusting backwards if deemed necessary. For single time series this has the advantage of promoting consistent data series. For time series across two levels or across sectors there is however no efforts of ensuring consistency. Hence if data are made smoother in one sector and not in the other, the reader might get a biased impression of the relationship. If you combine two or more databases which are not consistent, a biased impression of the relationship is obviously even more likely.

With other words, the online age has made it possible for anybody to access and download data from a range of databases. We will however strongly recommend users of international databases to review several as well as to follow them over some years before being ready fully to draw upon their utility.

### 6.4. Recommendations

The main conclusions could be summarised as follows:

- Even at the current level of statistical development it is possible to establish and maintain statistical information to track resource and policy impact towards poverty reduction, other MDGs and PRSP objectives at the international level for the seven Norwegian main development partner countries.
- Overall resources allocated to primary and overall health services and primary and overall school services increased since 1990. In general increased resources go hand in hand with improved outputs and outcomes. But there are numerous cases where changes in inputs or outputs are not matched by changes in outcomes. Poverty data are still too short and irregular to show any trends.
- International databases tend to apply a policy of annually reviewing and adjusting national figures and if deemed necessary even adjusting single time series backwards. This might improve consistency of each single time series, but might also cause a discrepancy towards nationally presented data, data presented in previous years, and opening for lack of consistency across two time series.
- Further insight into tracking resource and policy impact requires country level data.

Based upon these four main conclusions we are presenting three main recommendations for the further use of this approach, as follows:

- *Recommendation 1 - Consider establishing a database for tracking resource and policy impact at the national level.* The report shows that it is possible and policy relevant to establish a statistical database for tracking resource and policy impact at sector level from resource allocation, through outputs to outcome. When poverty trend data are becoming available, it is likely to be possible to track the impact on sector outcomes on poverty. Hence it is recommended to consider this approach for presenting data for the MDGs, PRSPs and other overall policy plans in all developing countries with available data.
- *Recommendation 2 - Consider establishing a permanent database for Norwegian users with data for the Norwegian development partner countries with annual electronic reports.* International databases may have their shortcomings and requires professional follow up, but are useful for tracking resource and policy impact towards poverty reduction, other MDGs and PRSP objectives for the seven Norwegian main development partner countries. We recommend to consider organising a permanent database for Norwegian users including

all the Norwegian partner countries, with annual reports based upon the approach presented.

- *Recommendation 3 - Before establishing a database for Norwegian users consider whether to combine this with support to national level databases and a mirror database in Norway.* Before deciding whether to establish such a base with international data, we recommend applying this approach at the national level in the Norwegian partner countries and consider whether it is possible to organise a combination of national databases with nationally provided figures (at national level with a mirror copy in Norway) and international databases for regional and global comparison.

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**Appendix 1**

# Measuring Development Progress: a Working Set of Core Indicators - International Development Goals[26]

| GOALS | INDICATORS |
|---|---|
| **Economic well-being** | |
| **Reducing extreme poverty** | |
| The proportion of people living in extreme poverty in developing countries should be reduced by at least one-half by 2015. *(Copenhagen)* | 1. Incidence of Extreme Poverty: Population Below $1 Per Day<br>2.Poverty Gap Ratio: Incidence times Depth of Poverty<br>3. Inequality: Poorest Fifth's Share of National Consumption<br>4. Child Malnutrition: Prevalence of Underweight Under5s |
| **Social development** | |
| **Universal primary education** | |
| There should be universal primary education in all countries by 2015. *(Jomtien. Beijing. Copenhagen)* | 5. Net Enrolment in Primary Education<br>6. Completion of 4th Grade of Primary Education<br>7. Literacy Rate of 15 to 24 Year-Olds |
| **Gender equality** | |
| Progress towards gender equality and the empowerment of women should be demonstrated by eliminating gender disparity in primary and secondary education by 2005. *Cairo. Beijing. Copenhagen)* | 8. Ratio of Girls to Boys in Primary & Secondary Education<br>9. Ratio of Literate Females to Males (15 to 24 Year-Olds) |
| **Infant & child mortality** | |
| The death rates for infants and children under the age of five years should be reduced in each developing country b two-thirds the 1990 level b 2015. *(Cairo)* | 10. Infant Mortality Rate .<br>11. Under 5 Mortality Rate |
| **Maternal mortality** | |
| The rate of maternal mortality should be reduced by three-fourths between 1990 and 2015. *(Cairo. Beijing)* | 12. Maternal Mortality Ratio<br>13. Births Attended b Skilled Health Personnel |
| **Reproductive health** | |
| Access should be available through the primary health-care system to reproductive health services for all individuals of appropriate ages, no later than the year 2015. *(Cairo)* | 14. Contraceptive Prevalence Rate<br>15. HIV Prevalence in 15 to 24 Year-Old Pregnant Women |
| **Environmental sustainability & regeneration** | |
| **Environment** | |
| There should be a current national strategy for sustainable development, in the process of implementation, in every country by 2005, so as to ensure that current trends in the loss of environmental resources are effectively reversed at both global and national levels by 2015. *(Rio)* | 16. Countries with National Sustainable Development Strategies<br>17. Population with Access to Safe Water<br>18. Intensity of Freshwater Use<br>19. Biodiversity: Land Area Protected<br>20. Energy Efficiency: GDP per Unit of Energy Use |
| **Emissions** | 21. Carbon Dioxide |
| **General Indicators** | |
| **Other selected indicators of development** | GNP per Capita<br>Adult Literacy Rate<br>Total Fertility Rate<br>Life Expectancy at Birth |
| | Aid as % of GNP<br>External Debt as % of GNP<br>Investment as % of GDP<br>Trade as % of GDP |
| For reference: Population<br>Gross *National Product* | |

This list is neither exclusive nor comprehensive and some elements (e.g. environment) remain under discussion. It reflects progress to date in identifying core indicators that are relevant to the development goals selected from the series of UN Conferences held in the 1990s, and which now form a wide consensus on development priorities. The goals were selected because they were important in their own right and as meaningful proxies for broader development goals. The selection does not imply any diminished commitment to other goals accepted by the international community, at international conferences or elsewhere. The list reinforces other indicator initiatives, such as the Minimum National Social Data Set of the United Nations Statistics Division, and the General Data Dissemination System of the IMF.

[26] UN Statistical Division, 2000. In: http://www.un.org.

**Appendix 2**

# Millennium Development Goals (MDGs) [27]

| Goals and targets | Indicators |
|---|---|
| **Goal 1. Eradicate extreme poverty and hunger** | |
| **Target 1**. Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day | 1. Proportion of population below $1 per day<br>2. Poverty gap ratio (incidence x depth of poverty)<br>3. Share of poorest quintile in national consumption |
| **Target 2.** Halve, between 1990 and 2015, the proportion of people who suffer from hunger | 4. Prevalence of underweight children (under five years of age)<br>5. Proportion of population below minimum level of dietary energy consumption |
| **Goal 2. Achieve universal primary education** | |
| **Target 3.** Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling | 6. Net enrolment ratio in primary education<br>7. Proportion of pupils starting grade 1 who reach grade 5<br>8. Literacy rate of 15-24-year olds |
| **Goal 3. Promote gender equality and empower women** | |
| **Target 4.** Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015 | 9. Ratio of girls to boys in primary, secondary and tertiary education<br>10. Ratio of literate females to males of 15-to-24-year-olds<br>11. Share of women in wage employment in the non-agricultural sector<br>12. Proportion of seats held by women in national parliament |
| **Goal 4. Reduce child mortality** | |
| **Target 5.** Reduce by two thirds, between 1990 and 2015, the under-five mortality rate | 13. Under-five mortality rate<br>14. Infant mortality rate<br>15. Proportion of 1-year-old children immunized against measles |
| **Goal 5. Improve maternal health** | |
| **Target 6.** Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio | 16. Maternal mortality ratio<br>17. Proportion of births attended by skilled health personnel |
| **Goal 6. Combat HIV/AIDS, malaria and other diseases** | |
| **Target 7.** Have halted by 2015 and begun to reverse the spread of HIV/AIDS | 18. HIV prevalence among 15-to-24-year-old pregnant women<br>19. Contraceptive prevalence rate<br>20. Number of children orphaned by HIV/AIDS |
| **Target 8.** Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases | 21. Prevalence and death rates associated with malaria<br>22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures<br>23. Prevalence and death rates associated with tuberculosis<br>24. Proportion of tuberculosis cases detected and cured under directly observed treatment short course |
| **Goal 7. Ensure environmental sustainability[a]** | |
| **Target 9.** Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources | 25. Proportion of land area covered by forest<br>26. Land area protected to maintain biological diversity<br>27. GDP per unit of energy use (as proxy for energy efficiency)<br>28. Carbon dioxide emissions (per capita)<br>(Plus two figures of global atmospheric pollution: ozone depletion and the accumulation of global warming gases) |
| **Target 10.** Halve by 2015 the proportion of people without sustainable access to safe drinking water | 29. Proportion of population with sustainable access to an improved water source |

[27] United Nations( 2004), UN Millennium Development Goals, http://www.un.org/millenniumgoals[2004].

| | |
|---|---|
| **Target 11.** By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers | 30. Proportion of people with access to improved sanitation<br>31. Proportion of people with access to secure tenure<br>(Urban/rural disaggregation of several of the above indicators may be relevant for monitoring improvement in the lives of slum dwellers) |

**Goal 8. Develop a Global Partnership for Development**[a]

| | |
|---|---|
| **Target 12.** Develop further an open, rule-based, predictable, non-discriminatory trading and financial system<br>(Includes a commitment to good governance, development, and poverty reduction — both nationally and internationally) | [Some of the indicators listed below will be monitored separately for the least developed countries (LDCs), Africa, landlocked countries and small island developing States]<br>Official development assistance<br>32. Net ODA as percentage of OECD/DAC donors' gross national income (targets of 0.7 per cent% in total and 0.15 per cent for LDCs) |
| **Target 13.** Address the Special Needs of the Least Developed Countries<br>(Includes: tariff and quota free access for least developed countries' exports; enhanced programme of debt relief for HIPCs and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction) | 33. Proportion of ODA to basic social services (basic education, primary health care, nutrition, safe water and sanitation)<br>34. Proportion of ODA that is untied<br>35. Proportion of ODA for environment in small island developing States<br>36. Proportion of ODA for transport sector in landlocked countries |
| **Target 14.** Address the special needs of landlocked countries and small island developing States<br>(through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly) | Market access<br>37. Proportion of exports (by value and excluding arms) admitted free of duties and quotas<br>38. Average tariffs and quotas on agricultural products and textiles and clothing<br>39. Domestic and export agricultural subsidies in OECD countries |
| **Target 15.** Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term | 40. Proportion of ODA provided to help build trade capacity<br>Debt sustainability<br>41. Proportion of official bilateral HIPC debt cancelled<br>42. Debt service as a percentage of exports of goods and services<br>43. Proportion of ODA provided as debt relief<br>44. Number of countries reaching HIPC decision and completion points |
| **Target 16.** In cooperation with developing countries, develop and implement strategies for decent and productive work for youth | 45. Unemployment rate of 15-to-24-year-olds |
| **Target 17.** In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries | 46. Proportion of population with access to affordable essential drugs on a sustainable basis |
| **Target 18.** In cooperation with the private sector, make available the benefits of new technologies, especially information and communications | 47. Telephone lines per 1,000 people<br>48. Personal computers per 1,000 people<br>[Other indicators to be decided] |

[a] The selection of indicators for goals 7 and 8 is subject to further refinement.

**Appendix 3**

# Definitions used in World Development Indicators.

**Expenditure, total (% of GDP)**
Total expenditure includes both current and capital expenditures. It does not include government lending or repayments to the government or government acquisition of equity for public purposes. Data are shown for central government only.
*Source:*
International Monetary Fund, Government Finance Statistics Yearbook and data files, and World Bank and OECD GDP estimates.

**Health expenditure, public (% of GDP)**
Public health expenditure consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds.
*Source:*
World Health Organization, World Health Report and subsequent updates, and from the OECD for its member countries, and from countries' national health accounts, supplemented by World Bank country and sector studies.

**Health expenditure per capita (current US$)**
Total health expenditure is the sum of public and private health expenditures as a ratio of total population. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation. Data are in current U.S. dollars.
*Source:*
World Health Organization, World Health Report and subsequent updates and from the OECD for its member countries, supplemented by World Bank country and sector studies.
*Footnote:*
Aggregate data differ from those shown in the WDI book. The book figures are based on the most recent estimate for each country from 1997 to 2000.

**Immunisation, DPT (% of children under 12 months)**
Child immunization measures the percentage of vaccination coverage of children under one year of age. A child is considered adequately immunized against diphtheria, pertussis (or whooping cough), and tetanus (DPT) after receiving three doses of vaccine.
*Source:*
World Health Organization.

**Mortality of children under five years, (per thousand)**
Under-5 mortality rate is the probability that a newborn baby will die before reaching age five, if subject to current age-specific mortality rates. The probability is expressed as a rate per 1,000.
*Source:*
World Bank staff estimates using data from the United Nations and UNICEF, State of the World's Children.

**Education expenditures, public, % of government consumption expenditures**
There is no definition for this from the World Development Indicators Report 2000.
For WDI 2003:Public expenditure on education consists of public spending on public education plus subsidies to private education at the primary, secondary, and tertiary levels.
*Source*:
United Nations Educational, Scientific, and Cultural Organization and World Bank and OECD GDP estimates.
*Footnote:*
Data from 1998 are provisional for Organisation of Economic Co-operation and Development (OECD) countries (Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Rep., Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States) and World Education Indicators (WEI) countries (Argentina, Brazil, Chile, China, Egypt, India, Indonesia, Jamaica, Jordan, Malaysia, Paraguay, Peru, the Philippines, the Russian Federation, Sri Lanka, Thailand, Tunisia, Uruguay and Zimbabwe).

**School enrolment, primary (% net)**
Net enrolment ratio is the ratio of the number of children of official school age (as defined by the national education system) who are enrolled in school to the population of the corresponding official school age. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music. Based on the International Standard Classification of Education, 1976 (ISCED76) and 1997 (ISCED97).
*Source:*
United Nations Educational, Scientific, and Cultural Organization.
*Footnote:*
Break in series between 1997 and 1998 due to due to change from ISCED76 to ISCED97. Data from 1998 are provisional for Organisation of Economic Co-operation and Development (OECD) countries (Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Rep., Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States) and World Education Indicators (WEI) countries (Argentina, Brazil, Chile, China, Egypt, India, Indonesia, Jamaica, Jordan, Malaysia, Paraguay, Peru, the Philippines, the Russian Federation, Sri Lanka, Thailand, Tunisia, Uruguay and Zimbabwe).

Net enrolment ratios exceeding 100 indicate discrepancies between the estimates of school-age population and reported enrolment data.

**Illiteracy rate, youth total (% of people ages 15-24)**
Youth illiteracy rate is the percentage of people ages 15-24 who cannot, with understanding, read and write a short, simple statement on their everyday life.
*Source:*
United Nations Educational, Scientific, and Cultural Organization.

**Improved water source (% of population with access)**
Access to an improved water source refers to the percentage of the population with reasonable access to an adequate amount of water from an improved source, such as a household connection, public standpipe, borehole, protected well or spring, and rainwater collection. Unimproved sources include vendors, tanker trucks, and unprotected wells and springs. Reasonable access is defined as the availability of at least 20 liters a person a day from a source within one kilometer of the dwelling.
*Source:*
World Health Organization and United Nations Children's Fund, Global Water Supply and Sanitation Assessment 2000 Report.

**Improved sanitation facilities (% of population with access)**
Access to improved sanitation facilities refers to the percentage of the population with at least adequate excreta disposal facilities (private or shared, but not public) that can effectively prevent human, animal, and insect contact with excreta. Improved facilities range from simple but protected pit latrines to flush toilets with a sewerage connection. To be effective, facilities must be correctly constructed and properly maintained.
*Source:*
World Health Organization and United Nations Children's Fund, Global Water Supply and Sanitation Assessment 2000 Report.

**Diarrhoeal disease incidence**
There is no definition for this from the World Development Indicators Report 2000.

**Poverty headcount, national (% of population)**
National poverty rate is the percentage of the population living below the national poverty line. National estimates are based on population-weighted sub-group estimates from household surveys.
*Source:*
World Bank staff estimates based on the World Bank's country poverty assessments.

**GNI per capita, PPP (current international $)**
GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any

product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in current international dollars.
*Source:*
World Bank, International Comparison Programme database.

**Appendix 4**

# Time series data from World Development Indicators 2000-2003.

**Appendix 4a. Public health expenditure as % of government consumption expenditure reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 18 | 19 | 23 | 24 | 25 | 25 | 31 | 39 | 35 | x | x |
| | 2001 | 17 | 19 | 20 | 22 | 25 | 24 | 32 | 41 | 36 | .. | x |
| | 2002 | 17 | 18 | 21 | 23 | 24 | 25 | 31 | 40 | 36 | .. | .. |
| Bangladesh | 2003 | 17 | 18 | 21 | 23 | 24 | 26 | 33 | 32 | 29 | 32 | 30 |
| | 2000 | .. | 12 | .. | 13 | 16 | 23 | 27 | 26 | 20 | x | x |
| | 2001 | .. | 12 | .. | 13 | 16 | 23 | 27 | 26 | 21 | .. | x |
| | 2002 | .. | 12 | .. | 13 | 16 | 23 | 27 | 26 | 21 | .. | .. |
| Mala•i | 2003 | .. | 12 | .. | 13 | 16 | 16 | 24 | 29 | 26 | 28 | 22 |
| | 2000 | 31 | 35 | .. | .. | .. | .. | .. | 28 | .. | x | x |
| | 2001 | 31 | 35 | 21 | 24 | 20 | 33 | 25 | 20 | 29 | .. | x |
| | 2002 | 31 | 35 | 21 | 24 | 20 | 33 | 25 | 20 | 30 | .. | .. |
| Mozambique | 2003 | 31 | 35 | 21 | 24 | 20 | 38 | 39 | 32 | 26 | 27 | 28 |
| | 2000 | 10 | 6 | 8 | 7 | 7 | 7 | 7 | 11 | 14 | x | x |
| | 2001 | 9 | 5 | 8 | 7 | 6 | 8 | 8 | 11 | 14 | .. | x |
| | 2002 | 10 | 6 | 8 | 7 | 7 | 7 | 7 | 11 | 14 | .. | .. |
| Nepal | 2003 | 10 | 6 | 8 | 7 | 7 | 8 | 8 | 10 | 12 | 10 | 10 |
| | 2000 | 11 | 9 | 9 | 10 | 16 | 8 | 9 | 11 | 15 | x | x |
| | 2001 | 9 | 8 | 8 | 9 | 16 | 10 | 11 | 13 | 12 | .. | x |
| | 2002 | 9 | 8 | 8 | 9 | 16 | 10 | 11 | 13 | 17 | .. | .. |
| Tanzania | 2003 | 9 | 8 | 8 | 9 | 16 | 25 | 22 | 28 | 31 | 34 | 43 |
| | 2000 | .. | .. | .. | 24 | 17 | 16 | 19 | 17 | .. | x | x |
| | 2001 | .. | .. | .. | 23 | 17 | 16 | 18 | 17 | 20 | .. | x |
| | 2002 | .. | .. | .. | 24 | 17 | 16 | 19 | 17 | 19 | .. | .. |
| Uganda | 2003 | .. | .. | .. | 24 | 17 | 14 | 14 | 14 | 13 | 15 | 12 |
| | 2000 | 14 | 5 | 10 | 9 | 14 | 20 | .. | .. | 21 | x | x |
| | 2001 | 14 | 5 | 9 | 9 | 15 | 23 | 28 | 31 | 32 | .. | x |
| | 2002 | 14 | 5 | 10 | 9 | 15 | 23 | 28 | 31 | 32 | .. | .. |
| Zambia | 2003 | 14 | 5 | 10 | 9 | 15 | 18 | 17 | 19 | 20 | 24 | 36 |

**Appendix 4b.. Health expenditure per capita, PPP (current international $), reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 25 | 26 | 29 | 34 | 37 | 39 | 43 | 50 | 45 | x | x | x |
| | 2001 | 28 | 29 | 32 | 36 | 39 | 41 | 46 | 53 | 51.. | | x | x |
| | 2002 | 25 | 26 | 30 | 35 | 36 | 40 | 45 | 53 | 50 | .. | .. | x |
| Bangladesh | 2003 | 24 | 25 | 28 | 33 | 35 | 35 | 42 | 43 | 48 | 53 | 58 | .. |
| | 2000 | .. | .. | .. | .. | .. | .. | .. | .. | 20 | x | x | x |
| | 2001 | .. | .. | .. | .. | .. | 44 | 40 | 44 | 36.. | | x | x |
| | 2002 | .. | .. | .. | .. | .. | 41 | 53 | 52 | 29 | .. | .. | x |
| Mala•i | 2003 | .. | .. | .. | .. | .. | 26 | 42 | 44 | 29 | 32 | 38 | .. |
| | 2000 | .. | .. | .. | .. | .. | .. | .. | .. | .. | x | x | x |
| | 2001 | 25 | 27 | 20 | 19 | 23 | 23 | 19 | 19 | 28.. | | x | x |
| | 2002 | 23 | 24 | 14 | 16 | 22 | 21 | 21 | 19 | 29 | .. | .. | x |
| Mozambique | 2003 | 27 | 28 | 16 | 19 | 25 | 34 | 43 | 39 | 38 | 37 | 40 | .. |
| | 2000 | 35 | 36 | 38 | 40 | 42 | 46 | 48 | 52 | 58 | x | x | x |
| | 2001 | 40 | 40 | 43 | 44 | 47 | 51 | 54 | 58 | 66.. | | x | x |
| | 2002 | 37 | 31 | 38 | 40 | 48 | 48 | 47 | 59 | 62 | .. | .. | x |
| Nepal | 2003 | 35 | 29 | 35 | 38 | 46 | .. | .. | .. | .. | .. | .. | .. |
| | 2000 | .. | .. | .. | .. | .. | .. | .. | .. | .. | x | x | x |
| | 2001 | 15 | 14 | 15 | 17 | 21 | 14 | 15 | 14 | 15.. | | x | x |
| | 2002 | 11 | 15 | 16 | 16 | 20 | 14 | 18 | 16 | 16 | .. | .. | x |
| Tanzania | 2003 | 11 | 14 | 15 | 15 | 18 | 19 | 21 | 21 | 20 | 21 | 22 | .. |
| | 2000 | .. | .. | .. | .. | | 35.. | .. | | 50.. | | x | x | x |
| | 2001 | .. | .. | .. | .. | | 35 | 48 | 48 | 50 | 65.. | | x | x |
| | 2002 | .. | .. | .. | .. | 42 | 55 | 48 | 47 | 63 | .. | .. | x |
| Uganda | 2003 | .. | .. | .. | .. | 49 | 51 | 43 | 43 | 45 | 50 | 51 | .. |
| | 2000 | 27.. | .. | .. | .. | .. | .. | .. | .. | 33 | x | x | x |
| | 2001 | 28 | 29 | 35 | 35 | 35 | 39 | 46 | 48 | 52.. | | x | x |
| | 2002 | 27 | 27 | 34 | 34 | 35 | 41 | 43 | 50 | 49 | .. | .. | x |
| Zambia | 2003 | 26 | 25 | 33 | 32 | 33 | 38 | 39 | 46 | 41 | 39 | 42 | .. |

**Appendix 4c. Immunisation, DPT (% of children under 12 months), reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 69 | 87 | 98 | 90 | 94 | 91 | 97 | 98.. | | x | x | x |
| | 2001 | 69 | 87 | 98 | 90 | 94 | 91 | 97 | 98 | 78 | 66 | x | x |
| | 2002 | 69 | 74 | 66 | 74 | 84 | 69 | 77 | 78 | 82 | 72 | .. | x |
| Bangladesh | 2003 | 69 | 74 | 66 | 74 | 84 | 69 | 77 | 78 | 82 | 72 | .. | 83 |
| | 2000 | 87 | 81 | 86 | 91 | 98 | 89 | 90 | 95.. | | x | x | x |
| | 2001 | 87 | 81 | 86 | 91 | 98 | 89 | 90 | 95 | 96 | 81 | x | x |
| | 2002 | 87 | 87 | 87 | 91 | 82 | 89 | 90 | 95 | 93 | 84 | .. | x |
| Mala•i | 2003 | 87 | 87 | 87 | 91 | 82 | 89 | 90 | 95 | 93 | 84 | .. | 90 |
| | 2000 | 46 | 46 | 50 | 49 | 55 | 57 | 60 | 61.. | | x | x | x |
| | 2001 | 46 | 46 | 50 | 49 | 55 | 57 | 60 | 61 | 77 | 81 | x | x |
| | 2002 | 46 | 46 | 50 | 49 | 56 | 57 | 60 | 61 | 61 | 61 | .. | x |
| Mozambique | 2003 | 46 | 46 | 50 | 49 | 56 | 57 | 60 | 61 | 61 | 61 | .. | 80 |
| | 2000 | 80 | 74 | 72 | 68 | 63 | 65 | 75 | 78.. | | x | x | x |
| | 2001 | 80 | 74 | 72 | 68 | 63 | 65 | 75 | 78 | 76 | 76 | x | x |
| | 2002 | 43 | 46 | 49 | 51 | 54 | 54 | 65 | 76 | 76 | 76 | .. | x |
| Nepal | 2003 | 43 | 46 | 49 | 51 | 54 | 54 | 65 | 76 | 76 | 76 | .. | 72 |
| | 2000 | 78 | 81 | 82 | 77 | 83 | 82 | 70 | 74.. | | x | x | x |
| | 2001 | 78 | 81 | 82 | 77 | 83 | 82 | 70 | 74 | 74 | 82 | x | x |
| | 2002 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | x |
| Tanzania | 2003 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 85 |
| | 2000 | 77 | 77 | 71 | 73 | 79 | 79 | 79 | 58.. | | x | x | x |
| | 2001 | 77 | 77 | 71 | 73 | 79 | 74 | 72 | 58 | 46 | 51 | x | x |
| | 2002 | 45 | 49 | 53 | 56 | 60 | 59 | 57 | 56 | 55 | 55 | .. | x |
| Uganda | 2003 | 45 | 49 | 53 | 56 | 60 | 59 | 57 | 56 | 55 | 55 | .. | 60 |
| | 2000 | 71 | 91 | 61 | 67 | 86 | 82 | 83 | 70.. | | x | x | x |
| | 2001 | 71 | 91 | 61 | 67 | 86 | 82 | 83 | 70.. | | 92 | x | x |
| | 2002 | 91 | 79 | 83 | 86 | 90 | 86 | 87 | 89 | 90 | 84 | .. | x |
| Zambia | 2003 | 91 | 79 | 83 | 86 | 90 | 86 | 87 | 89 | 90 | 84 | .. | 78 |

**Appendix 4d.. Mortality rate 1-5 years (1<x=<5 yrs. per 1000 one year old children), reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 50 | .. | .. | 37 | .. | .. | .. | 31 | 25 | x | x | x |
| | 2001 | 50 | .. | .. | 37 | .. | .. | .. | 30 | .. | 30 | x | x |
| | 2002 | 50 | .. | .. | 37 | .. | .. | .. | 30 | .. | .. | 24 | x |
| Bangladesh | 2003 | 53 | .. | .. | .. | .. | 44 | .. | .. | .. | .. | 30 | 27 |
| | 2000 | 109 | .. | .. | .. | .. | .. | .. | 105 | 110 | x | x | x |
| | 2001 | 109 | .. | .. | .. | .. | .. | .. | 105 | .. | 110 | x | x |
| | 2002 | 122 | .. | 111 | .. | .. | .. | .. | 94 | .. | .. | 101 | x |
| Mala•i | 2003 | 111 | .. | .. | .. | .. | 96 | .. | .. | .. | .. | 80 | 78 |
| | 2000 | .. | .. | 93 | .. | .. | 76 | .. | 76 | 91 | x | x | x |
| | 2001 | .. | .. | 93 | .. | .. | 76 | .. | 76 | .. | 83 | x | x |
| | 2002 | .. | .. | 93 | .. | .. | 76 | .. | 76 | .. | .. | 81 | x |
| Mozambique | 2003 | 107 | .. | .. | .. | .. | 95 | .. | .. | .. | .. | 85 | 82 |
| | 2000 | 41 | .. | .. | .. | 42 | .. | .. | 41 | 32 | x | x | x |
| | 2001 | 41 | .. | .. | .. | 42 | .. | .. | 41 | .. | 36 | x | x |
| | 2002 | 41 | .. | .. | .. | 42 | .. | .. | 41 | .. | .. | 34 | x |
| Nepal | 2003 | 50 | .. | .. | .. | .. | 38 | .. | .. | .. | .. | 25 | 27 |
| | 2000 | .. | .. | .. | .. | 54 | .. | .. | 56 | 56 | x | x | x |
| | 2001 | .. | .. | 68 | .. | .. | .. | .. | 53 | .. | 63 | x | x |
| | 2002 | .. | .. | 68 | .. | .. | .. | .. | 53 | .. | .. | 62 | x |
| Tanzania | 2003 | 68 | .. | .. | .. | .. | 68 | .. | .. | .. | .. | 68 | 68 |
| | 2000 | 68 | .. | .. | .. | .. | .. | .. | 70 | 77 | x | x | x |
| | 2001 | 68 | .. | .. | .. | .. | .. | .. | 70 | .. | 81 | x | x |
| | 2002 | 68 | .. | .. | .. | .. | .. | .. | 70 | .. | .. | 85 | x |
| Uganda | 2003 | 72 | .. | .. | .. | .. | 60 | .. | .. | .. | .. | 50 | 49 |
| | 2000 | .. | .. | 96 | .. | 99 | .. | .. | 86 | 88 | x | x | x |
| | 2001 | .. | .. | 96 | .. | 99 | .. | .. | 85 | .. | 82 | x | x |
| | 2002 | .. | .. | 96 | .. | 99 | .. | .. | 85 | .. | .. | 81 | x |
| Zambia | 2003 | 94 | .. | .. | .. | .. | 101 | .. | .. | .. | .. | 101 | 101 |

**Appendix 4e. Public education expenditure as % of government consumption expenditure reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 41 | 44 | 45 | 38 | 39 | 39 | 40 | 39 | 40 | x | x | x |
| | 2001 | 36 | 40 | 40.. | .. | .. | | 52.. | .. | .. | | x | x |
| | 2002 | 35 | 40 | 39 | .. | .. | .. | 52 | .. | .. | .. | .. | x |
| Bangladesh | 2003 | 35 | 40 | 40 | .. | .. | .. | 52 | .. | 51 | 52 | 54 | .. |
| | 2000 | 15 | 18 | 27 | 29 | 11 | 27 | 29 | 30 | 28 | x | x | x |
| | 2001 | 21 | 26 | 34 | 33 | 13 | 28.. | .. | .. | .. | | x | x |
| | 2002 | 21 | 26 | 34 | 33 | 13 | 29 | .. | .. | 34 | .. | .. | x |
| Mala•i | 2003 | 21 | 26 | 34 | 33 | 13 | 29 | .. | .. | 34 | 33 | .. | .. |
| | 2000 | 31 | 33 | 27 | 29 | 26 | 44 | 48 | 47 | 37 | x | x | x |
| | 2001 | 33.. | .. | .. | .. | .. | .. | .. | .. | .. | | x | x |
| | 2002 | 27 | .. | .. | .. | .. | .. | .. | .. | 31 | .. | .. | x |
| Mozambique | 2003 | 27 | .. | .. | .. | .. | .. | .. | .. | 24 | 25 | .. | .. |
| | 2000 | 24 | 22 | 26 | 25 | 23 | 23 | 22 | 24 | 23 | x | x | x |
| | 2001 | 23 | 29 | 37 | 39 | 35 | 36 | 34 | 36.. | .. | | x | x |
| | 2002 | 23 | 29 | 37 | 38 | 35 | 36 | 34 | 36 | 27 | .. | .. | x |
| Nepal | 2003 | 23 | 29 | 37 | 38 | 35 | 36 | 34 | 36 | 31 | 33 | 41 | .. |
| | 2000 | 17 | 15 | 15 | 15 | 20 | 21 | 26 | 34 | 41 | x | x | x |
| | 2001 | 18.. | .. | .. | .. | .. | .. | .. | .. | .. | | x | x |
| | 2002 | 16 | .. | .. | .. | .. | .. | .. | .. | 28 | .. | .. | x |
| Tanzania | 2003 | 16 | .. | .. | .. | .. | .. | .. | .. | 27 | .. | .. | .. |
| | 2000 | 18 | 20 | 19 | 19 | 18 | 25 | 21 | 21 | 23 | x | x | x |
| | 2001 | 19 | 22.. | .. | | 21 | 26.. | .. | .. | .. | | x | x |
| | 2002 | 20 | 22 | .. | .. | 21 | 26 | .. | .. | 16 | .. | .. | x |
| Uganda | 2003 | 20 | 22 | .. | .. | 21 | 26 | .. | .. | .. | 20 | .. | .. |
| | 2000 | 9 | 7 | 12 | 10 | 13 | 14 | 15 | 17 | 17 | x | x | x |
| | 2001 | 13 | 9 | 14 | 11 | 15 | 16.. | .. | .. | .. | | x | x |
| | 2002 | 13 | 9 | 14 | 11 | 15 | 16 | .. | .. | 21 | .. | .. | x |
| Zambia | 2003 | 13 | 9 | 14 | 11 | 15 | 13 | .. | .. | 15 | .. | .. | .. |

**Appendix 4f. Education expenditure per capita, PPP (current international $) reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 16 | 17 | 20 | 20 | 21 | 23 | 23 | 24 | 24 | x | x | x |
| | 2001 | 17 | 18 | 21 | 21 | 22 | 23 | 24 | 24 | 25 | 26 | x | x |
| | 2002 | 16 | 17 | 21 | 20 | 21 | 22 | 23 | 24 | 24 | 26 | 27 | x |
| Bangladesh | 2003 | 15 | 17 | 20 | 20 | 21 | 22 | 22 | 22 | 23 | 24 | 26 | 27 |
| | 2000 | 11 | 11 | 17 | 19 | 14 | 24 | 22 | 22 | 21 | x | x | x |
| | 2001 | 11 | 11 | 17 | 18 | 14 | 24 | 21 | 22 | 21 | 22 | x | x |
| | 2002 | 11 | 11 | 16 | 18 | 14 | 24 | 21 | 22 | 22 | 23 | 23 | x |
| Mala•i | 2003 | 10 | 10 | 15 | 17 | 13 | 23 | 24 | 24 | 24 | 25 | 26 | 25 |
| | 2000 | 19 | 19 | 18 | 20 | 21 | 22 | 24 | 25 | 27 | x | x | x |
| | 2001 | 20 | 20 | 19 | 20 | 21 | 22 | 24 | 26 | 28 | 30 | x | x |
| | 2002 | 19 | 19 | 18 | 20 | 21 | 22 | 23 | 25 | 27 | 29 | 30 | x |
| Mozambique | 2003 | 22 | 23 | 21 | 23 | 25 | 26 | 27 | 29 | 32 | 35 | 36 | 40 |
| | 2000 | 18 | 19 | 20 | 22 | 20 | 24 | 24 | 25 | 24 | x | x | x |
| | 2001 | 18 | 19 | 20 | 22 | 20 | 25 | 25 | 26 | 26 | 26 | x | x |
| | 2002 | 18 | 19 | 20 | 22 | 20 | 25 | 25 | 26 | 26 | 27 | 28 | x |
| Nepal | 2003 | 17 | 25 | 28 | 33 | 29 | 36 | 36 | 38 | 38 | 39 | 42 | 44 |
| | 2000 | 12 | 13 | 12 | 14 | 17 | 16 | 16 | 16 | 16 | x | x | x |
| | 2001 | 13 | 13 | 13 | 14 | 17 | 16 | 16 | 16 | 16 | 17 | x | x |
| | 2002 | 13 | 13 | 13 | 14 | 17 | 16 | 16 | 16 | 16 | 17 | 18 | x |
| Tanzania | 2003 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 | 12 | 12 |
| | 2000 | 10 | 14 | 15 | 16 | 17 | 24 | 23 | 23 | 24 | x | x | x |
| | 2001 | 10 | 14 | 15 | 16 | 17 | 24 | 23 | 24 | 24 | 26 | x | x |
| | 2002 | 10 | 14 | 15 | 16 | 17 | 24 | 23 | 24 | 24 | 26 | 27 | x |
| Uganda | 2003 | 30 | 31 | 32 | 35 | 20 | 22 | 24 | 24 | 24 | 26 | 27 | 28 |
| | 2000 | 13 | 17 | 14 | 14 | 13 | 14 | 14 | 14 | 13 | x | x | x |
| | 2001 | 15 | 20 | 16 | 15 | 14 | 15 | 15 | 15 | 14 | 14 | x | x |
| | 2002 | 15 | 20 | 15 | 15 | 14 | 15 | 15 | 15 | 14 | 14 | 15 | x |
| Zambia | 2003 | 18 | 19 | 15 | 14 | 13 | 14 | 15 | 15 | 14 | 14 | 15 | 16 |

**Appendix 4g School enrolment, primary (% net), reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 64 | 65 | 66 | 67 | 68 | 70 | 72 | 75 | .. | x | x | x |
| | 2001 | 64 | .. | .. | .. | .. | .. | .. | .. | .. | .. | x | x |
| | 2002 | 64 | .. | .. | .. | .. | .. | .. | .. | 104 | .. | .. | x |
| Bangladesh | 2003 | 64 | .. | .. | .. | .. | .. | .. | .. | 90 | 89 | 89 | .. |
| | 2000 | 50 | 55 | 55 | 68 | 100 | 100 | 100 | 99 | .. | x | x | x |
| | 2001 | 50 | .. | 55 | 68 | 103 | .. | .. | .. | .. | .. | x | x |
| | 2002 | 50 | .. | 55 | 68 | 103 | .. | .. | .. | .. | .. | .. | x |
| Mala•i | 2003 | 50 | .. | 55 | 68 | 103 | .. | .. | .. | .. | 99 | 101 | .. |
| | 2000 | 47 | 44 | 41 | 39 | 39 | 40 | 41 | 40 | .. | x | x | x |
| | 2001 | 47 | 44 | 41 | 39 | 39 | 40 | .. | .. | .. | .. | x | x |
| | 2002 | 47 | 44 | 41 | 39 | 39 | 40 | .. | .. | 41 | .. | .. | x |
| Mozambique | 2003 | 47 | 44 | 41 | 39 | 39 | 40 | .. | .. | 46 | 50 | 54 | .. |
| | 2000 | 81 | 81 | 83 | 82 | 82 | 80 | 79 | 78 | .. | x | x | x |
| | 2001 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | x | x |
| | 2002 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | x |
| Nepal | 2003 | .. | .. | .. | .. | .. | .. | .. | .. | 70 | 71 | 72 | .. |
| | 2000 | 51 | 51 | 50 | 49 | 48 | 48 | 48 | 48 | .. | x | x | x |
| | 2001 | 51 | 51 | 50 | 49 | 48 | 48 | 48 | 48 | .. | .. | x | x |
| | 2002 | 51 | 51 | 50 | 49 | 48 | 48 | 48 | 48 | 48 | .. | .. | x |
| Tanzania | 2003 | 51 | 51 | 50 | 49 | 48 | 48 | 48 | 48 | 46 | 47 | 47 | .. |
| | 2000 | .. | .. | .. | .. | .. | .. | .. | .. | .. | x | x | x |
| | 2001 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | x | x |
| | 2002 | .. | .. | .. | .. | .. | .. | .. | 87 | .. | .. | .. | x |
| Uganda | 2003 | .. | .. | .. | .. | .. | .. | .. | 87 | 103 | .. | 109 | .. |
| | 2000 | 84 | 84 | 85 | 79 | 77 | 75 | 74 | 72 | .. | x | x | x |
| | 2001 | .. | .. | .. | .. | 77 | 75 | .. | .. | .. | .. | x | x |
| | 2002 | .. | .. | .. | .. | 77 | 75 | .. | .. | 73 | .. | .. | x |
| Zambia | 2003 | .. | .. | .. | .. | 77 | 75 | .. | .. | 69 | 66 | 66 | .. |

**Appendix 4h. Illiteracy rate, youth total (% of people ages 15-24), reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 56 | 56 | 55 | 54 | 54 | 53 | 52 | 51 | 50 | x | x | x |
| | 2001 | 56 | 56 | 55 | 54 | 54 | 53 | 52 | 51 | 50 | 50 | x | x |
| | 2002 | 56 | 56 | 55 | 54 | 54 | 53 | 52 | 51 | 51 | 50 | 49 | x |
| Bangladesh | 2003 | 58 | 57 | 57 | 56 | 56 | 55 | 54 | 54 | 53 | 52 | 52 | 51 |
| | 2000 | 37 | 36 | 35 | 34 | 34 | 33 | 32 | 31 | 31 | x | x | x |
| | 2001 | 37 | 36 | 35 | 34 | 34 | 33 | 32 | 31 | 31 | 30 | x | x |
| | 2002 | 37 | 36 | 35 | 34 | 33 | 33 | 32 | 31 | 30 | 30 | 29 | x |
| Mala•i | 2003 | 37 | 36 | 35 | 34 | 33 | 33 | 32 | 31 | 30 | 30 | 29 | 28 |
| | 2000 | 51 | 51 | 49 | 48 | 47 | 45 | 44 | 43 | 42 | x | x | x |
| | 2001 | 51 | 51 | 49 | 48 | 47 | 45 | 44 | 43 | 42 | 41 | x | x |
| | 2002 | 51 | 50 | 49 | 48 | 46 | 45 | 44 | 43 | 42 | 41 | 39 | x |
| Mozambique | 2003 | 51 | 50 | 49 | 48 | 46 | 45 | 44 | 43 | 42 | 41 | 39 | 38 |
| | 2000 | 54 | 53 | 51 | 50 | 48 | 46 | 45 | 44 | 43 | x | x | x |
| | 2001 | 54 | 53 | 51 | 50 | 48 | 46 | 45 | 44 | 43 | 42 | x | x |
| | 2002 | 53 | 52 | 50 | 49 | 47 | 45 | 44 | 43 | 42 | 41 | 39 | x |
| Nepal | 2003 | 53 | 52 | 50 | 49 | 47 | 45 | 44 | 43 | 42 | 41 | 40 | 38 |
| | 2000 | 16 | 15 | 15 | 14 | 13 | 12 | 12 | 11 | 10 | x | x | x |
| | 2001 | 16 | 15 | 15 | 14 | 13 | 12 | 12 | 11 | 10 | 9 | x | x |
| | 2002 | 17 | 16 | 15 | 14 | 14 | 13 | 12 | 11 | 11 | 10 | 9 | x |
| Tanzania | 2003 | 17 | 16 | 15 | 14 | 14 | 13 | 12 | 12 | 11 | 10 | 9 | 9 |
| | 2000 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 23 | x | x | x |
| | 2001 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 23 | 22 | x | x |
| | 2002 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 24 | 23 | 22 | 21 | x |
| Uganda | 2003 | 30 | 29 | 28 | 27 | 26 | 25 | 25 | 24 | 23 | 22 | 21 | 21 |
| | 2000 | 19 | 18 | 17 | 17 | 16 | 15 | 14 | 14 | 13 | x | x | x |
| | 2001 | 19 | 18 | 17 | 17 | 16 | 15 | 14 | 14 | 13 | 13 | x | x |
| | 2002 | 19 | 18 | 17 | 17 | 16 | 15 | 14 | 14 | 13 | 12 | 12 | x |
| Zambia | 2003 | 19 | 18 | 17 | 16 | 16 | 15 | 14 | 14 | 13 | 12 | 12 | 11 |

**Appendix 4i. Improved water source (% of population with access), reported 1990 & 2000, as presented 2002-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2002 | 91 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 97 | x |
| Bangladesh | 2003 | 94 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 97 | .. |
| | 2002 | 49 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 57 | x |
| Malawi | 2003 | 49 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 57 | .. |
| | 2002 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 60 | x |
| Mozambique | 2003 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 57 | .. |
| | 2002 | 66 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 81 | x |
| Nepal | 2003 | 67 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 88 | .. |
| | 2002 | 50 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 54 | x |
| Tanzania | 2003 | 38 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 68 | .. |
| | 2002 | 44 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 50 | x |
| Uganda | 2003 | 45 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 52 | .. |
| | 2002 | 52 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 64 | x |
| Zambia | 2003 | 52 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 64 | .. |

**Appendix 4j. Improved sanitation facilities (% of population with access), reported 1990 & 2000, as presented 2002-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2002 | 37 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 53 | x |
| Bangladesh | 2003 | 41 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 48 | .. |
| | 2002 | 73 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 77 | x |
| Malawi | 2003 | 73 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 76 | .. |
| | 2002 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 43 | x |
| Mozambique | 2003 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 43 | .. |
| | 2002 | 21 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 27 | x |
| Nepal | 2003 | 20 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 28 | .. |
| | 2002 | 88 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 90 | x |
| Tanzania | 2003 | 84 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 90 | .. |
| | 2002 | 84 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 75 | x |
| Uganda | 2003 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 79 | .. |
| | 2002 | 63 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 78 | x |
| Zambia | 2003 | 63 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 78 | .. |

**Appendix 4k. Poverty headcount, national (% of population), reported 1990-2000, as presented 2002-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2002 | .. | .. | 43 | .. | .. | .. | 36 | .. | .. | .. | .. | x |
| Bangladesh | 2003 | .. | .. | .. | .. | .. | .. | 34 | .. | .. | .. | 34 | .. |
| | 2002 | .. | 54 | .. | .. | .. | .. | .. | .. | .. | .. | .. | x |
| Malawi | 2003 | .. | 54 | .. | .. | .. | .. | .. | .. | 65 | .. | .. | .. |
| | 2002 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | x |
| Mozambique | 2003 | .. | .. | .. | .. | .. | .. | .. | 69 | .. | .. | .. | .. |
| | 2002 | .. | .. | .. | .. | .. | .. | 42 | .. | .. | .. | .. | x |
| Nepal | 2003 | .. | .. | .. | .. | .. | .. | 42 | .. | .. | .. | .. | .. |
| | 2002 | .. | 51 | .. | .. | .. | .. | .. | .. | .. | .. | .. | x |
| Tanzania | 2003 | .. | 51 | .. | 42 | .. | .. | .. | .. | .. | .. | .. | .. |
| | 2002 | .. | .. | .. | 55 | .. | .. | .. | .. | .. | .. | .. | x |
| Uganda | 2003 | .. | .. | .. | 55 | .. | .. | .. | .. | .. | .. | .. | .. |
| | 2002 | .. | 68 | .. | 86 | .. | .. | .. | .. | .. | .. | .. | x |
| Zambia | 2003 | .. | .. | .. | .. | .. | .. | 69 | .. | 73 | .. | .. | .. |

**Appendix 4l. GNI per capita, PPP (current international $), reported 1990-2000, as presented 2000-2003**

| Country | Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 973 | 1 015 | 1 098 | 1 157 | 1 213 | 1 292 | 1 344 | 1 380 | 1 407 | x | x | x |
| | 2001 | 1 020 | 1 060 | 1 140 | 1 190 | 1 240 | 1 320 | 1 380 | 1 430 | 1 460 | 1 530 | x | x |
| | 2002 | 1 000 | 1 040 | 1 110 | 1 160 | 1 210 | 1 290 | 1 340 | 1 390 | 1 420 | 1 500 | 1 590 | x |
| Bangladesh | 2003 | 950 | 990 | 1060 | 1110 | 1150 | 1230 | 1270 | 1320 | 1350 | 1420 | 1530 | 1600 |
| | 2000 | 457 | 499 | 474 | 521 | 436 | 522 | 562 | 569 | 551 | x | x | x |
| | 2001 | 460 | 500 | 470 | 510 | 450 | 530 | 560 | 560 | 550 | 570 | x | x |
| | 2002 | 440 | 480 | 450 | 500 | 450 | 530 | 560 | 570 | 570 | 590 | 600 | x |
| Mala•i | 2003 | 410 | 450 | 430 | 470 | 420 | 500 | 530 | 540 | 540 | 560 | 580 | 560 |
| | 2000 | 501 | 528 | 481 | 529 | 562 | 594 | 637 | 689 | 740 | x | x | x |
| | 2001 | 510 | 540 | 500 | 550 | 580 | 610 | 640 | 690 | 750 | 810 | x | x |
| | 2002 | 490 | 520 | 480 | 530 | 560 | 590 | 620 | 670 | 730 | 790 | 800 | x |
| Mozambique | 2003 | 570 | 600 | 560 | 610 | 650 | 680 | 710 | 770 | 850 | 910 | 940 | 1050 |
| | 2000 | 877 | 934 | 991 | 1 027 | 1 107 | 1 150 | 1 183 | 1 203 | 1 181 | x | x | x |
| | 2001 | 910 | 960 | 1 010 | 1 050 | 1 120 | 1 160 | 1 210 | 1 240 | 1 230 | 1 280 | x | x |
| | 2002 | 900 | 960 | 1 010 | 1 040 | 1 120 | 1 170 | 1 210 | 1 240 | 1 240 | 1 290 | 1 370 | x |
| Nepal | 2003 | 850 | 910 | 960 | 990 | 1070 | 1110 | 1150 | 1180 | 1180 | 1230 | 1320 | 1360 |
| | 2000 | 416 | 434 | 397 | 444 | 450 | 463 | 474 | 476 | 483 | x | x | x |
| | 2001 | 440 | 440 | 450 | 450 | 450 | 460 | 470 | 480 | 480 | 500 | x | x |
| | 2002 | 430 | 440 | 450 | 440 | 450 | 460 | 480 | 480 | 480 | 500 | 520 | x |
| Tanzania | 2003 | 410 | 420 | 420 | 420 | 420 | 440 | 450 | 450 | 460 | 470 | 500 | 520 |
| | 2000 | 706 | 745 | 771 | 839 | 881 | 982 | 1 053 | 1 066 | 1 072 | x | x | x |
| | 2001 | 730 | 760 | 790 | 850 | 890 | 990 | 1 060 | 1 080 | 1 090 | 1 160 | x | x |
| | 2002 | 730 | 770 | 790 | 850 | 890 | 990 | 1 060 | 1 080 | 1 090 | 1 170 | 1 210 | x |
| Uganda | 2003 | 850 | 890 | 920 | 990 | 1040 | 1160 | 1240 | 1250 | 1270 | 1360 | 1420 | 1460 |
| | 2000 | 673 | 652 | 667 | 725 | 699 | 682 | 721 | 723 | 678 | x | x | x |
| | 2001 | 770 | 760 | 750 | 800 | 720 | 700 | 740 | 740 | 700 | 720 | x | x |
| | 2002 | 770 | 760 | 750 | 800 | 720 | 710 | 740 | 740 | 710 | 720 | 750 | x |
| Zambia | 2003 | 730 | 720 | 720 | 760 | 680 | 670 | 700 | 710 | 670 | 690 | 720 | 750 |

**Appendix 5**

# Acronyms and Abbreviations

| | |
|---|---|
| CD-ROM | Compact Disc Read-Only-Memory |
| CGE | Computable General Equilibrium |
| CPI | Consumer Price Index |
| DALE | Disability Adjusted Life Expectancy |
| DFID | Department of International Development (UK) |
| DPT, DPT3 | Diphtheria, Pertussis, and Tetanus vaccination. The third round of DPT |
| EFA | Education For All |
| FAO | Food and Agricultural Organization (of UN) |
| GDI | Gross Domestic Income |
| GDP | Gross Domestic Product |
| GER | Gross Enrolment Ratio |
| GNI | Gross National Income |
| GNP | Gross National Product |
| HESO | Centre for Health and Social Development |
| HDI | Human Development Index |
| HDR | Human Development Report |
| HIV/AIDS | Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome |
| IDB | Inter-American Development Bank |
| IDG | International Development Goals |
| ILO | International Labour Organization |
| IMF | The International Monetary Fund |
| ISCED | International Standard Classification of Education |
| KILM | Key Indicators for Labour Market |
| MCH | Mother and Child Health Care |
| MDG | Millennium Development Goals and indicators |
| MIS | Management Information System |
| MNSDS | Minimum National Social Data Set |
| NER | Net Enrolment Ratio |
| NGO | Non-Governmental Organizations |
| NORAD | Norwegian Agency for Development Cooperation |
| NSI | National Statistics Institutes |
| ODA | Official Development Assistance |
| OECD | Organization for Economic Cooperation and Development |
| OECD/DAC | OECD/ Development Assistance Committee |
| PARIS21 | PARtnership In Statistics in the 21st Century |
| PARPA | Action Plan for the Reduction of Absolute Poverty (Mozambique) |
| PHC | Primary Health Care |
| PPP$ | Purchasing Power Parity |
| PRSP | Poverty Reduction Strategy Paper |
| SDA | Social Dimensions of Adjustment Integrated Survey |
| TB | Tuberculosis |
| UIS | UNESCO Institute of Statistics |
| UN | United Nations |
| UN ECOSOC | UN Economic and Social Commission |
| UNDAF/CCA | UNDAF Common Country Assistance |
| UNDP | United Nations Development Program |
| UNDP/HDR | United Nations Development Program Human Development Report |
| UNESCO | UN Educational Scientific and Cultural Organization |
| UN Stat. Com | United Nations Statistical Commission |
| UNFPA | UN Family Planning Association |
| UNICEF | UN Children's Fund |
| US$ | United States of America dollars |
| UNAIDS | The Joint United Nations Programme on HIV/AIDS |
| UNSD | United Nations Statistical Division |
| WDI | World Development Indicators |
| WB | World Bank |
| WEI | World Education Indicators |
| WHO | World Health Organization |

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