

User Guide to the GENDER NEEDS ASSESSMENT MODEL

This user guide is an introduction to the UN Millennium Project's gender needs assessment tool. It assumes that users have read the *Handbook on Preparing National Strategies to Achieve the Millennium Development Goals*, available at <http://www.unmillenniumproject.org/policy/handbook.htm>, and have a basic familiarity with the fundamentals of an MDG Needs Assessment; it does not presume any prior technical knowledge of MDG needs assessment tools. The guide should be used concurrently with the gender needs assessment tool, available at www.unmillenniumproject.org/policy. In conjunction with the *Handbook*, it aims to help users embark on an MDG-based gender needs assessment. This tool has been used by numerous countries in their MDG planning processes and includes examples of costs and coverage rates. This data and the tool itself need be altered to reflect country needs.¹

PART ONE: Introduction to MDG-based Planning

Although the Millennium Development Goals (MDGs) have been ratified in global and national forums, they have not yet been incorporated into operational planning within governments or international organizations. Implementation of the MDG targets and timelines requires a shift in development practice. Currently, most low-income countries and their development partners plan around modest incremental expansions of social services and infrastructure, subject to overall resource envelopes. This approach does not systematically focus on the MDGs as the long-term objectives since scaling up is limited by resource constraints. The UN Millennium Project recommends a bold, needs-based, MDG-oriented framework over 10 years – aimed at achieving the quantitative targets set out in the Goals. This signals a move away from strategies to “accelerate progress towards the Goals within limited constraints,” to strategies that “achieve the Goals, by identifying all the actions and resources necessary to reach the MDG targets by 2015.” A strategy that is truly ambitious enough to achieve the MDGs will:

- § Be ambitious enough to achieve the goals
- § Be broad enough in scope to cover all of the relevant areas needed to achieve the goals
- § Be based on sector strategies that in turn derive from country needs, or the full set of actions needed in each area
- § Be situated in a long term context and
- § Be accompanied by adequate financing and linked to annual budgets.

MDG Needs Assessments

MDG needs assessments are the analytical building blocks for developing MDG-based national development strategies. They help answer the question: “What are the full set of human resources, infrastructure and financial resources that will be needed to meet the MDGs by 2015?” This analysis applies to all areas relevant to the MDGs- for example, agriculture and rural development, education, gender, health, environment, urban development and basic infrastructure such as provision of water and sanitation, roads and energy. The resulting estimates, calculated annually, can then be used to develop an MDG investment strategy, outlining sequencing of key

¹ This user guide draws upon text from *Investing in Development* (UN Millennium Project 2005), available at <http://www.unmillenniumproject.org/reports/fullreport.htm>, and *The Financial Requirements of Achieving Gender Equality and Women's Empowerment* (Grown et al. 2006).

investments, capacity building needs and an appropriate policy framework from which to draw the 3-5 year poverty reduction strategy. Including MDG needs assessments in the planning process will ensure that national development strategies include and integrate all of the interventions necessary for meeting the MDGs.

PART TWO: Introduction to Gender Needs Assessments

A particular challenge for national governments and the international community is how to accelerate implementation of Millennium Development Goal 3 (MDG3) for gender equality and women's empowerment at the country level. Sufficient knowledge exists about policies and interventions to eliminate many forms of gender inequality and to empower women, but this knowledge has yet to be systematically translated into comprehensive and large-scale change at the country level.

Too often, promising policy initiatives for gender equality and women's empowerment falter because insufficient resources are allocated to implement them. The shift of emphasis from women-specific projects to gender mainstreaming is thought by many to have exacerbated this problem because mainstreaming has not been linked to flows of funding across all sectors. The routines of government resource allocation have not generated information about financing requirements and funding gaps for the achievement of gender equality and women's empowerment.

Gender equality and women's empowerment initiatives can be more easily incorporated into government budgets if their costs have been estimated. Estimating the costs of each initiative as part of a comprehensive, long-term gender needs assessment, will help planners to envision how gender initiatives can be included in MDG-based national development plans. A gender needs assessment can then act as an advocacy tool to ensure that appropriate gender interventions are included in future budget formulations and as a monitoring tool to ensure that gender programs and initiatives are implemented and achieve their intended results.

What is required to achieve MDG3?²

The financial costs of efforts to reduce gender inequality are difficult to calculate because gender inequality is both multi-dimensional and multi-sectoral. Most exercises that estimate the costs of the MDGs interpret MDG3 as the elimination of gender disparity in education. Although the time-bound target of MDG3 is to eliminate gender gaps in primary and secondary education, achieving gender equality and women's empowerment involves more than simply eliminating education gaps. It also requires equal economic opportunities, equal ownership and control over productive assets, freedom from drudgery, equal representation in decision-making bodies, and freedom from the threat of violence and coercion. Recognizing the broad spirit of the goal, the UN Millennium Project Task Force 3 on Education and Gender Equality determined seven strategic priorities for action on MDG3³:

² This section includes extracts from *The Financial Requirements of Achieving Gender Equality and Women's Empowerment* (Grown et al. 2006).

³ For more information on the operational framework on which the Task Force based their understanding of gender equality and identified the seven strategic priorities, please see *Taking Action: Achieving Gender Equality and Empowering Women* (UN Millennium Project 2005a), available at http://www.unmillenniumproject.org/reports/tf_gender.htm.

1. Strengthen opportunities for post-primary education for girls while meeting commitments to universal primary education.
2. Guarantee sexual and reproductive health and rights.
3. Invest in infrastructure to reduce women and girls' time burdens.
4. Guarantee women and girls' property and inheritance rights.
5. Eliminate gender inequality in employment by decreasing women's reliance on informal employment, closing gender gaps in earnings, and reducing occupational segregation.
6. Increase women's share of seats in national parliaments and local government bodies.
7. Significantly reduce violence against girls and women.

Some of the above strategic priorities relate to other MDG sectors and planners may wish to mainstream interventions into the needs assessments for their respective sectors. Subsidies for girls in post-primary education, for example, could be included into an education sector plan. When mainstreaming gender interventions, it is important to map out which gender interventions are going to be included in a specific gender plan and which are going to be mainstreamed. This process will help planners ensure that each priority is sufficiently addressed, and the resulting "map" can act as a framework that planners can use to monitor the needs assessment of both gender-specific and mainstreamed interventions.

Why are gender needs assessments necessary components of MDG3 planning processes?

A gender needs assessment can provide an operational model for achieving the Millennium Development Goal 3. The process of preparing an MDG needs assessment forces planners to consider the interventions necessary to achieve an MDG target, as well as appropriate scale up paths for achieving the target by 2015 in the context of human resource and financial resource availability. This process requires planners to conduct three investigations: 1) determine the current status of women across social, economic, and political fields; 2) consider what gender programs are already in place and determine what gender programs will be the most effective in achieving MDG3; and 3) determine the best methods of implementing and scaling up these programs and the human resources, infrastructure, and finances required to do so. These three steps in the needs assessment process ensure that gender plans are made up of programs designed specifically for the population in need, account lessons learned from previous programs, and include details on the resource requirements that will be necessary if these programs are to be successful.

When preparing a gender needs assessment, planners must first examine the current state of national and regional gender inequality in politics, education, the workforce, and in the home, as well as the programs already in place to promote gender equality and empower women in these fields. This assessment will provide the basis from which planners can consider what new interventions will be necessary to achieve gender equality by 2015, and how existing programs should be scaled up. Intervention packages should be designed for the specific needs of each country's female population, taking into account any regional variation of these needs.

Planners will need to consult with NGOs, women's ministries, and international organizations to design appropriate interventions based on lessons learned from past experience. These organizations can help design detailed plans for programs by indicating the specific inputs and services that will be required for the programs to be implemented and then scaled up. Including these bodies in this early stage of the planning process will also help build ties so that these bodies will have an interest in the success of the plan when implemented.

How does the gender needs assessment fit into the overall MDG planning process?

When used in conjunction with other MDG needs assessment tools, the gender needs assessment tool can help planners to position both gender-specific and mainstreaming programs in their national development planning and budgeting processes. Most gender mainstreaming interventions can be included in relevant MDG sector needs assessments. For example, the investments needed to build girls' toilets would need to be mainstreamed in the education strategy.

Although many of the gender interventions required to achieve MDG3 can be mainstreamed into other MDG sector needs assessments, there are some gender interventions that are not directly related to the other MDG sectors. The cost of these interventions will need to be estimated in a specific gender needs assessment. The gender needs assessment tool is necessary for the estimation of the resource requirements of these gender-specific interventions. Such a tool also helps in estimating the resources required for systemic capacity building, such as the costs of setting up a women's ministry or gender focal teams in the line ministries. A gender needs assessment conducted in conjunction with other MDG needs assessments can help ensure that all of the investments required to achieve MDG3 are accounted for in MDG planning and national budgets.

Meeting the MDGs will require integrated strategies of complementary and mutually reinforcing interventions. When MDG needs assessments include all of the necessary cross-sector interventions required to meet the MDGs, they reflect the integrated requirements for meeting the MDGs and help shape national development strategies to do the same. Conducting MDG needs assessments for each sector concurrently will help expose the integrated nature of the MDGs and the lines along which ministries will need to work in order to achieve each of them. An integrated multi-sector needs assessment process will also help avoid double-counting of intervention resource requirements.

PART THREE: Overview of the UN Millennium Project Gender Needs Assessment Model

UN Millennium Project has developed an interventions-based, cross-sector needs assessment tool that aims to estimate the human resource, infrastructure and investments required to achieve the MDG3 by 2015. Based on data input by the user, the gender needs assessment tool estimates the resources needed to support gender interventions as part of a strategy for meeting the MDGs at the national level. It yields aggregate financial costs, as well as quantitative estimates of necessary infrastructure, such as shelters for violence victims, and specialized human resources, such as gender units in government ministries. These estimates, along with estimates from other thematic areas (health, education, rural and urban development, etc.) help provide the basis for a national investment strategy for meeting the Millennium Development Goals.

The *Handbook* specifies an approach to creating an MDG-based NDS, and describes in detail the steps required to conduct an MDG needs assessment. This introduction will briefly outline these steps, and the role that the gender model plays in the overall MDG needs assessment process.

First and foremost, the MDGs need to be interpreted at the country level. This entails defining quantitative *outcome* targets that are meaningful at the national level, and defining the areas of intervention that are needed to meet each of the MDGs. For gender, the MDG target of gender parity in schools is relatively clear, but countries may wish to alter the target in various ways. For example, countries may wish to achieve gender parity in schools before 2015 or add targets for

workforce participation. Once outcome targets have been set, there are four steps in conducting a needs assessment, illustrated in Figure 1 and described below.

Figure 1: Steps in an MDG Needs Assessment

1 – Develop list of interventions

Users first need to define the critical interventions required to meet the MDGs. As outlined in the *Handbook*, interventions are defined broadly here as goods, services and infrastructure that need to be provided to generate outcomes. In gender, interventions include, for example, provision of shelters for victims of violence against women requires staff, materials, and infrastructure. The UN Millennium Project recommends that thematic working groups be organized as part of the MDG-based planning process. These groups will help to guide the selection of a comprehensive set of interventions that comprise each investment cluster [see *Step 2* of the *Handbook*]. In many cases countries will have already elaborated such interventions in their national and sectoral planning documents. These documents should be a starting place for defining MDG interventions. The UN Millennium Project has drawn up sample lists of interventions to reach the MDGs that can also be an input into thematic working group discussions. This list will then have to be modified and adapted to national needs. The gender-related interventions from these lists are the basis of the interventions outlined in this model.

2 – Specify targets for each set of interventions

Once national outcome targets have been set and interventions have been identified, countries need to determine who the interventions should reach, what proportion of this population will need to be covered by 2015, and how many units of each intervention are needed to reach them. This requires setting targets for each intervention and input quantity ratios that relate interventions to the people they reach. For example, violence protection interventions aim to reach a certain percentage of violence victims. To know the number of shelters that need to be built to meet this goal, countries need to also set a target shelter-to-victim ratio. These quantified coverage targets and ratios are the basis for determining “how much” of each intervention will be necessary over the 10-year period. Countries should also establish interim milestones to measure progress.

Where relevant, targets and their corresponding interventions can be disaggregated by age and gender as well as by urban and rural areas. For example, urban and rural areas often require distinct interventions and technologies or face very different unit costs.⁴ Disaggregation by gender and age will help countries better target services to populations in need and to adjust their service delivery to a changing demographic profile. You will find advice on using the models to reflect additional disaggregation in Part Four of this guide: Adapting the Model.

3 - Estimate resource needs

The next step is to estimate the financial, human and other resources needed to achieve the identified targets. The UN Millennium Project’s gender model is designed to assist countries in making these estimates. This Excel-based needs assessment tool integrates the information input by the user to generate these estimates. It uses outcome targets, coverage targets and ratios, and unit costs to develop aggregate as well as intervention-by-intervention estimates of resource requirements. Similarly, simple ratios between beneficiaries, HR parameters, and infrastructure

⁴ A clear distinction between urban and rural needs is particularly warranted for the following categories: water supply and sanitation, transport infrastructure and energy services.

yield the non-monetary results. A simple ten-year scale up path allows users to map out the yearly investments needed to meet 2015 targets. The model aims to be transparent and adaptable to national needs. This user guide focuses largely on explaining how to use and adapt this model.

4 - Check Results

With any needs assessment, the results should be carefully reviewed to make sure that they are accurate and adequate to reach the MDGs. While every country will obtain different results based on local circumstances, the UN Millennium Project has carried out preliminary needs assessments in several countries that can serve as a basis for comparison. These results provide some guidance on the order of magnitude of the costs for reaching the MDGs in a subset of low income countries. See the Handbook for sample results across areas and countries.

The gender sectoral needs assessment is part of a broad MDG strategy that covers all investment areas. Once needs assessments are completed for all investment clusters, they need to be aggregated and integrated as a first step in creating a ten-year MDG framework. As part of this consolidation process, countries should produce one summary budget outlining the projected expenditures for meeting the MDGs. In practice, this means that each model should contain a summary output page that can be easily summed and manipulated across clusters. This model has a “Summary (OUTPUT)” worksheet that is formatted for incorporation in the UN Millennium Project’s “financing model”.⁵

This user guide is designed to explain the use of the needs assessment tool as clearly and simply as possible. As you work through it, please feel free to contact the UN Millennium Project with any comments, questions, or suggestions for improvement. We look forward to hearing from you and wish you good luck in the needs assessment process.

⁵ In addition to aggregation, this model allows countries to calculate the investments that can be financed by households and domestic government, and the remaining needs that will have to be financed by other sources such as ODA.

PART THREE: Needs Assessment Tool Basics

Objective

The objective of the gender needs assessment tool is to estimate the resources required for a country to achieve gender equality.

The Task Force on Education and Gender Equality identified a range of interventions required to meet the following targets: (1) to strengthen opportunities for post-primary education for girls while simultaneously meeting commitments to universal primary education; (2) increase adolescents' and women's access to a broad range of sexual and reproductive health information and services; (3) increase investments in infrastructure designed to reduce women's time burdens; (4) guaranteeing girls' and women's property and inheritance rights; (5) eliminate inequality in employment by decreasing women's reliance on informal employment, closing gender gaps in earnings, and reducing occupational segregation; (6) increase women's share of seats in national parliaments and local governmental bodies; and (7) significantly reduce violence against girls and women. This tool specifically models the financial resources required to implement these interventions.

Scope

MDG 3 calls for the promotion of gender equality and the empowerment of women. While the specific MDG target is to eliminate gender disparity in primary and secondary education by 2015, the UN Millennium Project takes a more holistic view of the Goal. Task Force believes that ultimate success in achieving Goal 3 depends both on the extent to which the priorities suggested here are addressed and the extent to which the actions taken to achieve the other Goals are designed to promote equality of men and women and boys and girls.

Gender equality is a critical part of other MDG needs assessment intervention packages, but there are certain gender targets that require interventions outside the scope of the other MDGs. This needs assessment addresses the following interventions: (1) promoting awareness of sexual and reproductive health issues; (2) helping transition of girls to work; (3) encouraging political participation; (4) ending violence against women; and (5) systemic issues.

Promoting awareness of sexual and reproductive health issues

Awareness of sexual and reproductive health issues is essential for reducing extreme poverty and hunger, ensuring educational opportunities and gender equality, and attaining environmental sustainability. Sexual and reproductive health services affect the allocation of resources within the family, the prospects for household savings, the household choices about education and health investments, the exercise of the right to choose the number, timing, and spacing of one's children, and the capacities for women's social and economic participation and other practical life decisions. At the macro-level these services affect population dynamics. When accompanied by appropriate policies, governance, and investment, a demographic transition to lower fertility and mortality (including that from HIV/AIDS) can translate into a "demographic bonus": an opportunity to escape poverty traps and to accelerate economic and social development. The UN Millennium Project calls for sexual and reproductive health issues to be included in national, regional, and international national development efforts. The three interventions used to promote

awareness of sexual and reproductive rights are mass media campaigns, community-based awareness programs, and school-based awareness programs.

Helping transition of girls to work

The task force has given priority to the needs of adolescent girls because they experience greater overall social, economic, and health disadvantages in most countries than do boys. Investments specifically designed to help girls in completing good quality secondary schooling, and to support their transition from education to work can accelerate progress toward several of the Millennium Development Goals faster than those targeting the adolescent cohort as a whole. Interventions to help this transition of girls to work are training focused (e.g., vocational training and school to work programmes).

Encouraging political participation

Political participation is important to gender equality for three reasons: (1) Countries where women's share of seats in political bodies is less than 30 percent are less inclusive, less egalitarian, and less democratic. Evidence also suggests that women's interests often differ from men's and that women who participate directly in decision-making bodies press for different priorities than those emphasized by men. (2) Equality of opportunity in politics is a human right. (3) Finally, women's participation in political decision-making bodies improves the quality of governance. Interventions to encourage women's political participation include training for women candidates for elections and support for women elected representatives.

Ending violence against women

Gender inequality perpetuates violence against women, and violence against women restricts women's ability to use their capabilities and take advantage of opportunities, thereby reinforcing gender inequality. Worldwide, it is estimated that violence against women is as serious a cause of death and incapacity among reproductive-age women as cancer, and it is a more common cause of ill-health among women than traffic accidents and malaria combined. The Task Force has designed interventions to end violence against women along three main categories - prevention, protection and punishment. Prevention interventions include community based awareness programs, help-lines, mass media campaigns, and neighborhood watches and support groups. Protection interventions include police services, health and medical services, short-term housing or emergency shelters, and psychological counseling. Punishment interventions include incarceration, legal services, and court cases and trials.

Systemic issues

Addressing systemic issues can help deliver the interventions described above and entrench the values of equality and women's empowerment within various institutions. The specific interventions suggested by the Task Force are: strengthening women's ministries and supporting gender mainstreaming with gender units in other ministries; sensitization programs for judges, bureaucrats, and police officers; and hiring additional female registration officers to empower women to vote.

Additional interventions for data collection and monitoring and general administrative costs should be included in a comprehensive needs assessment, but have not been included here. For additional information on adding these interventions, please see Part Four: Adapting the Model.

Limitations of the model

This model provides a framework for modeling the direct costs of achieving gender equality in a given country. Many other important interventions, such as neighborhood watches, support groups, and the punishment cluster of interventions in the “ending violence against women” intervention package can be included if relevant in your country. These interventions are critical to protecting women and should be added by the user. As neighborhood-based strategies will vary within and across countries, users should ensure that the costing methodology developed for these interventions accurately reflects any methodological differences in their intervention.

Additional costs for managing the systems required to implement the recommended interventions at scale are not detailed in the model. Data collection costs and general administrative costs are mentioned categorically in the needs assessment, but a comprehensive analysis on the requisite management systems is necessary to assess financial requirements for human resources, infrastructure, training, management systems, and monitoring and evaluation. For more information on how to add interventions, please see Part Four of this user guide: Adapting the model. Some suggestions for including systemic costs can also be found in Part Four of this user guide.

Synergies between interventions have also not been accounted for in this model as predicting the relationships among interventions can often be a complicated and unreliable practice. Users are encouraged to estimate the total needs of meeting the MDG gender Goal as a base. Once interventions are in place, synergies will be better understood at the local level, and the user can reflect synergy estimates in revised intervention scale-up paths and targets.

Data Requirements

The gender model will require users to supply a number of data inputs and parameters. These inputs fall into five basic categories: demographic data, coverage and outcome targets, input quantity ratios, and unit costs.

- *Demographic data* are needed to establish basic population parameters. Required inputs include population disaggregated by gender and age, and the number of students in primary and secondary school. These data are typically found in national population censuses and statistical databases.
- *Coverage targets* define the proportion of the population that will be reached by a given intervention. Some interventions in the gender needs assessment are intended to reach only a proportion of the population, and so apply only to specified sub-populations. For example, only the proportion of school-aged children that actually attend class will receive school-meals. If there are 100 school-aged children and 80% are in school, 50% school meal coverage would imply 40 school meals provided.
- *Input quantity ratios* define the ratios of inputs needed to deliver interventions, e.g. ratio of trainers per vocational training program. These ratios are necessary to calculate how many units of each intervention will be needed for a given coverage target. Many input quantity ratios have both a current and a target value; e.g. 5 trainers per vocational training program in 2005 and 10 trainers per program in 2015. Target input quantity ratios are important because they permit users to control aspects of service quality. It is important to note that input quantity ratios should not be a reflection of current coverage rates; this would underestimate the number of units required to be built that year. For

example, even if currently vocational training programs only have 3 trainers on average, the input quantity ratio for 2005 is 5, reflecting that the first year of MDG interventions should meet the 2005 target of 5.

- *Unit costs* describe the cost of a single intervention. Some examples include the cost of a single mass media campaign, or the cost of one yearly trainer's salary. These costs should be based on average unit costs for interventions and should embed all cost elements include production, procurement, and distribution. These data can be derived from a number of sources, including past procurement contracts or current market rates.

Because the model deals in constant dollars, costs are treated as static, i.e. the cost of programme materials is the same in 2005 as in 2015.

Key points:

1. This model calculates the full cost of interventions to achieve Millennium Development Goal 3, promote the gender equality and empower women.
2. The gender needs assessment includes interventions to: promote awareness of sexual and reproductive health issues, help the transition of girls to work, encourage political participation, end violence against women, and address systemic issues. Each of these elements is critical to achieving the MDGs.
3. Required inputs include demographic data, outcome and coverage targets, input quantity ratios, and unit costs. These can be derived from research, the experience of well-performing countries, national statistics, and records from relevant ministries.

PART THREE: Using the Gender Model

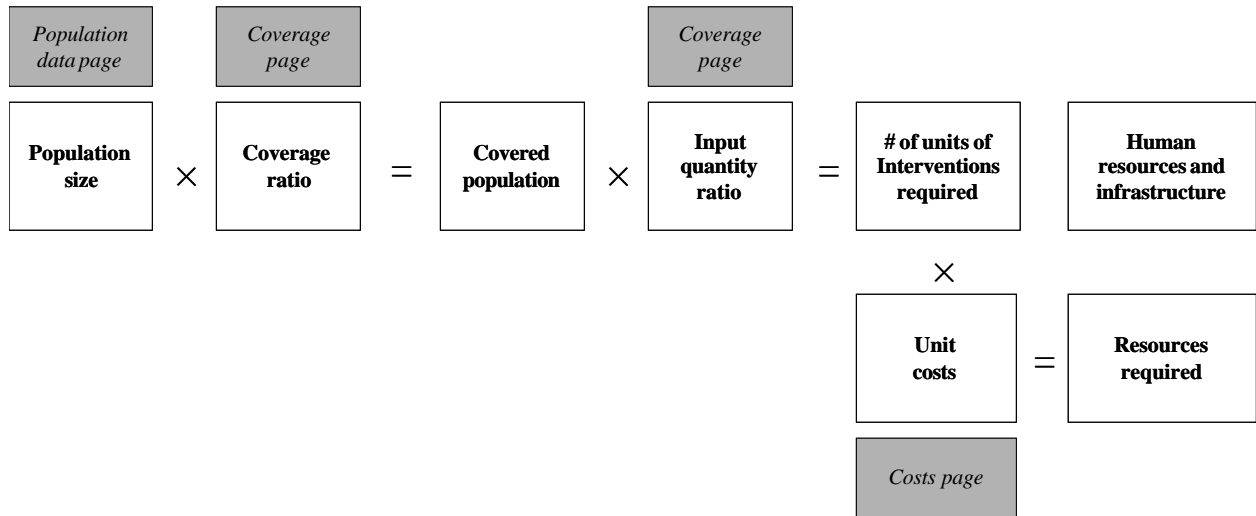
Modeling Methodology

The model follows the general needs assessment methodology outlined in the *Handbook*. As you will remember, this methodology asks users to define the interventions that are required to meet the Millennium Development Goals, define targets associated with these interventions, and determine the resources that will be required to implement them fully. In the Gender model, each of the five components – promoting awareness of sexual and reproductive health issues, helping the transition of girls to work, encouraging political participation, ending violence against women, and addressing systemic issues – is treated separately, and costed using this needs assessment methodology.

- *Interventions* are the specific inputs that are needed to deliver services effectively. They include, for example, training programs, awareness campaigns, police protection against gender-based violence, issuance of ID documents, etc.
- *Outcome targets, coverage targets, input quantity ratios, and unit costs* are all described above.
- *Resource requirements* are calculated using simple multiplication. The total population is multiplied by coverage targets to get the population covered by a particular intervention,

which is then multiplied by input quantity ratios to get the number of units required of each intervention. Finally, the required interventions are multiplied by unit costs, providing the total resource requirements for each year.

Methodology for calculating resource requirements



The Worksheets

Overview (GUIDE)

The Overview sheet provides a general overview to the model.

Definitions (GUIDE)

The Definitions page allows the user to define interventions and associated intervention targets. The page is divided into five sections that correspond to the five general areas addressed by the model: promoting awareness of sexual and reproductive health issues, helping the transition of girls to work, encouraging political participation, ending violence against women, and addressing systemic issues. In each area, the Definitions page lists categories of specific interventions that form the basis of the needs assessment exercise.

The cells on this page are linked to relevant fields on the other worksheets, so changing intervention names on this page will change them throughout the model. We will return to this feature in Part Four: Adapting the Model.

Population Data Entry (INPUT)

On this page, the user enters country-level population and demographic data. Required demographic data include total, female, adult female, adolescent female, and women in the 19-49 age group. Education data include adolescent female pop in school, primary school age population, secondary school age population, number of students in primary school, and number of children in secondary school. Bureaucratic/administrative data include number of female candidates standing for elections, number of female elected representatives, number of judges,

number of bureaucrats, number of police officers, and number of registration officials. Users should note that missing population data will nullify calculations for interventions that use this information to calculate ratios or beneficiaries. For example, if the model does not contain information on the number of female candidates standing for elections, resource needs for training female candidates will not be calculated. Data need to be entered for the base year, and growth projections need to be made for subsequent years until 2015. The population data page also requires data on per capita GDP in 2005, as well as projections through 2015.

It is important that these data are as recent and as accurate as possible, and that growth projections are based on reasonable assumptions. These data underpin the entire costing model, so it is essential to verify their accuracy. Population data and projections can be obtained from national census data, as well as from the UN Population Division.

NB: When conducting needs assessments that cover more than one sector, users should check to make sure that the same population data are used across different models to ensure consistency of results.

Coverage Data Entry (INPUT)

Each intervention section on this worksheet begins by defining the current and target coverage rate of a particular intervention. Each coverage section has two input cells: one for 2005 values, and one for 2015 targets. Users should input current data in the first (2005) cells to provide a baseline value, and then specify 2015 coverage targets in the second cell. It is important to note that intervention coverage rates will only apply to the relevant population group. For example, if there are 100 primary school age girls, 80% are enrolled in school, and 50% of these actually attend school, a coverage rate of 50% implies that 20 girls are affected by an intervention providing subsidies for school attendance among girls.

For each intervention, the user then specifies a series of input quantity ratios that relate the target population to the inputs needed to provide the intervention. Here too there are places to enter 2005 and 2015 input ratios. As explained in Part 2 of this guide, input quantity ratios in the first year should reflect MDG-compatible quality levels, and not simply be a reflection of current coverage rates. In each section, the first input quantity ratio specifies the number of people that can participate in a single program or service (e.g. # of girls per vocational program, # of judges per sensitization program, # of women per short-term housing shelter). The remaining input quantity ratios specify the number of staff, infrastructure units, or sets of materials that are needed to run a single program (e.g. phones per helpline program, ratio of trainers per program to support elected representatives, etc.).

Below is a section on programs to support elected representatives.

66	Encouraging political participation		
84	Support to elected representatives		
85	Coverage rate		
86	2005		0%
87	2015		100%
88	Ratio of candidates per program		
89	2005		0:1
90	2015		20:1
91	Ratio of trainers per program		
92	2005		2:1
93	2015		2:1
94	Ratio of staff per program		
95	2005		1:1
96	2015		1:1
97	Ratio of materials/publications per program		
98	2005		0:1
99	2015		20:1

Lines 86 and 87 specify the current and target percentage of female candidates that receive support (here, 0% scaling to a target 100% coverage). The next section, lines 89 and 90, specify the number of candidates that can participate in each program. The next sections specify how many trainers, staff members, and materials/publications will be necessary for each program. As you can see from lines 92-93, 95-96, and 98-99, these ratios increase over the period as the level of program participation and the program quality both increase.

Cost Data Entry (INPUT)

The Cost Data Entry page asks users to input the unit costs of each of the interventions specified in the model. Again, costs are divided among the five areas: promoting awareness of sexual and reproductive health issues, helping the transition of girls to work, encouraging political participation, ending violence against women, and addressing systemic issues. In each of these areas, costs are divided into one-time (capital) and ongoing (recurrent) costs, which the model uses separately in determining resource needs. Capital costs include infrastructure, one-time training needs, and other one-time purchases such as vehicles. Recurrent costs include staff salaries, ongoing training, and recurrent material needs. Costs should correspond to a one-unit investment (i.e. for one training program, or one mass-media campaign). At the end of the page, “general administrative costs” are specified as a percentage of total costs. Where a detailed breakdown of cost components into capital and recurrent costs is not available or is not appropriate, costs are entered on a per-capita basis (for example, for the issuance of ID cards). In this model, we provide illustrative costs; actual costs will naturally differ by country.

Below are the cost entries for awareness of sexual and reproductive health, which demonstrates the main types of costs that are entered on this worksheet.

13	Awareness of Sexual and Reproductive Health issues	
14		
15	<u>Mass media campaigns</u>	
16	Frequency of mass-media campaigns	1
17	Cost per mass-media campaign	28,880
18	<u>Community-based awareness programs</u>	
19	Capital/One time costs	
20	Materials	0.25
21	Trainers	30
22	Staff (training)	30
23	Recurrent costs	
24	Staff (salaries)	30
25	Operational costs	100
26	<u>School-based awareness programs</u>	
27	Recurrent costs (per student)	2

Under “mass media campaigns”, costs are entered in a per-campaign basis, as a one-time cost for each campaign. For community-based awareness programs, there are separate entry places for capital (materials, trainers, and one-time staff training) and for recurrent costs (staff salaries and yearly operational costs). For interventions in school-based awareness programs, the user enters simply a per-student recurrent cost for running the programs.

Organizing Data (OUTPUT)

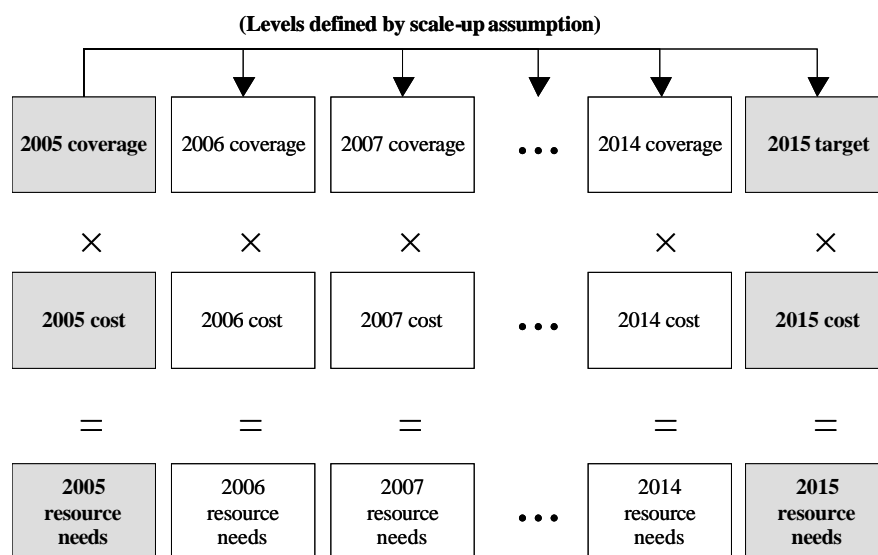
The Organizing Data page organizes all data into a tabular format that makes it easy for users to check whether their entries and assumptions are reasonable or correct. It does not require the user to input any new data. If the Organizing Data page reveals errors, corrections should be entered in the underlying page (e.g. Cost, Coverage, or Population Data); this will automatically update the Organizing Data page.

It is crucial to correct data in the underlying pages rather than in the Organizing Data page because the Resource Needs page draws all data inputs from the Organizing Data page. If users enter data directly into the Organizing Data page instead of the underlying data entry pages, they will break the link between the Resource Needs page and the underlying data entry pages, making future changes and analysis more difficult and error-prone. Therefore, **users should ensure that they use the Organizing Data page only to check the validity of their entries and make all changes on the underlying data input pages.**

Resource Needs (OUTPUT)

The Resource Needs page uses all of the input data entered thus far to estimate the resources needed to achieve the education targets. Users do not need to input new data into this page; the only input that may be required is the choice of a scale-up assumption (discussed below). The Resource Needs page takes the current coverage data and 2015 coverage targets and extrapolates a scale-up path between them to determine resource requirements for each year. The following figure demonstrates the basic approach of the Resource Needs calculator.

CALCULATING RESOURCE REQUIREMENTS

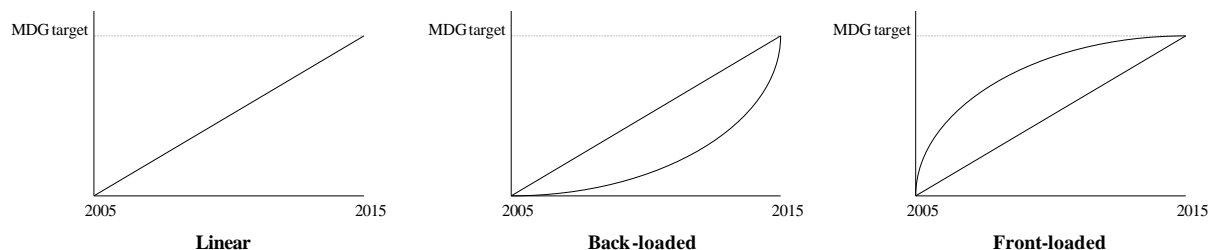


For any given coverage target, the model takes 2005 data and 2015 data and interpolates values for 2006, 2007, ... 2014, 2015 based on *scale-up assumptions* that chart out a *scale-up path*. The coverage rates implied in the scale-up path are then multiplied by unit costs (which may or may not vary with time) to determine annual resource requirements for each intervention.

An important distinction to make is between the way total capital and total recurrent costs are estimated. For interventions with both capital and recurrent costs, capital costs accrue only to the incremental units of interventions delivered, while recurrent costs accrue to all interventions delivered. For example, in the awareness program example below (which omits years 2011 through 2014), total staff capital costs are calculated by multiplying the number of additional staff members needed each year by the unit capital cost. Recurrent expenditures are calculated by multiplying the recurrent cost by the total number of staff.

a		2005	2006	2007	2008	2013	2014	2015
10	Awareness of Sexual and Reproductive Health issues							
11								
20	Coverage Rates							
21	Community Based Awareness Coverage Rate	1%	6%	11%	16%	40%	45%	50%
22	Implied # of people reached by awareness programs	276,074	1,210,370	2,193,652	3,226,646	9,161,230	10,506,694	11,906,580
23	Ratio of people per awareness program	5000:1	5000:1	5000:1	5000:1	5000:1	5000:1	5000:1
24	Implied # of awareness programs	55	242	439	645	1,832	2,101	2,381
29								
30	Ratio of staff per program	65:1	65:1	65:1	65:1	65:1	65:1	65:1
31	Implied # staff	3,589	15,735	28,517	41,946	119,096	136,587	154,786
32	Incremental # of staff	3,589	12,146	12,783	13,429	16,792	17,491	18,199
33								
59	Staff (unit cost)							
60	Capital Costs	30	30	30	30	30	30	30
61	Recurrent Costs	30	30	30	30	30	30	30
65								
69	Staff (total cost)							
70	Capital Costs	107,669	364,376	383,480	402,868	503,766	524,731	545,955
71	Recurrent Costs	107,669	472,044	855,524	1,258,392	3,572,880	4,097,611	4,643,566

The assumptions that chart out the scale-up path may vary from intervention to intervention. A common assumption is that coverage increases linearly each year between 2005 and 2015. This is the scale-up assumption that is currently embedded in the model. However, many different scale-up functions are feasible so long as they are increasing and use 2005 and 2015 as endpoints.



These diagrams depict linear, back-loaded and front-loaded scale-up paths. Linear scale-up paths roll out interventions at an even pace between 2006 and 2015. Back-loaded paths start the roll-out more slowly, but accelerate in the later years of the program. Front-loaded paths start out quickly to achieve rapid scale-up, then grow more slowly as 2015 approaches. Many other paths are possible.

Areas that require scale-up functions are highlighted in pink; users can change the scale-up paths by entering an appropriate formula in the 2006 column and extending it to 2014.

All of the input data has already been entered in the Cost, Coverage, and Population Data sheets. The only decision the user needs to make on the Resource Needs page is the choice of an appropriate scale-up path.

Which scale-up path should the user choose? The optimal scale-up path is the one that best reflects planners' strategies for scaling up the delivery of interventions. Planners should ask themselves what scale-up pattern makes the most sense. A linear scale-up function will make sense for some interventions, but perhaps not for others. For example, planners might want to front-load the expansion of some priority interventions, with the result that 2015 targets are reached much sooner, perhaps as soon as 2010. Another front-loaded scale-up path might be one that increases rapidly in the first five years, then increase at a much slower rate in the last five years.

By contrast, planners might need to back-load the expansion of interventions that are not yet ready to be scaled up, such that scale-up is convex to the origin, resembling exponential growth. Whatever the case, it is clear that planners will need to adapt scale-up paths to specific situations.

The Resource Needs page follows the same format as the Costs and Coverage pages, separating awareness of sexual and reproductive health, helping transition of girls to work, encouraging political participation, and ending violence against women. In addition, it calculates resource sub-totals for a number of categories, including infrastructure and human resources. At the bottom of the page, these sub-totals are aggregated into a summary table that calculates the aggregate sum of resources required.

Summary (OUTPUT)

The Summary sheet takes these sub-totals and organizes them into a table that provides information on total capital and recurrent resource requirements needed for each area for each year between 2005 and 2015. It also provides a 10-year average as well as per-capita cost calculations for total resource requirements. Note that these resource estimates include financial

as well as human and infrastructure requirements. The Summary sheet works automatically and does not require inputs from the user.

As discussed in the introduction to this guide, it is important that resource estimates can be aggregated across sectors. The Summary sheet is organized specifically to permit the results to be entered directly into the UN Millennium Project's financing model alongside the outputs of other needs assessment models.

The Summary sheet is organized specifically to permit the results to be entered directly into a financing model alongside the outputs of other needs assessment models.

KEY POINTS:

1. This model **defines interventions, sets coverage targets, identifies unit costs, and calculates resource requirements** for achieving the gender target.
2. The sheets of this model break up these tasks into separate steps. There are three input sheets. **"Population Data Entry (INPUT)"** collects basic demographic information. **"Definitions (GUIDE)"** assembles the list of interventions to be costed. **"Coverage Data Entry (INPUT)"** allows users to set targets for the interventions. **"Costs"** is a sheet for all unit costs to be input.
3. There are also three output sheets. **"Organizing data (OUTPUT)"** is an automatically generated sheet that tabularizes all of the data. **"Resource Needs (OUTPUT)"** calculates a scale-up path for resource requirements. **"Summary (OUTPUT)"** brings all of the calculations together into a sheet that displays aggregate capital and recurrent expenditures for each of the various areas for investment.

PART FOUR: Adapting the Model

The gender model is designed to be generally applicable to a broad range of countries and systems, but countries may wish to adapt it further to local circumstances. Here, we discuss four adaptations that countries may wish to make to the model: dropping interventions, changing interventions, adding interventions, and adding regions.

Dropping interventions

In some cases, countries may wish not to use one or more of the interventions built into the model. For example, a country may decide that school based awareness programs interventions are not needed. There are many ways to reflect this in the model, but the easiest is to zero out coverage and costs. To do this, users enter zeros for all coverage targets associated with the intervention. This will eliminate the intervention from resource estimates. In the example below, for example, subsidies for girls have been eliminated.

Changing interventions

To modify an intervention by changing it to a different kind of intervention, users should go to the “Definitions (GUIDE)” page and change the name of the intervention. Then, in each row where the intervention appears on the other worksheets (costs, coverage, resource needs), the user should alter the spreadsheet accordingly to reflect the costing of the intervention. If the costing methodology for the intervention remains the same as the one it is replacing, then changing the names of the cells in the “Interventions” page should be sufficient. Otherwise, the user will need to ensure that appropriate costing fields and formulas are entered for the new intervention.

Adding interventions

There are many ways to add interventions to the model, and advanced users should find it relatively easy to add rows and link them throughout the model to the relevant worksheets. The simplest, most modular, and most intuitive way to add an intervention to the model, however, is to add a worksheet to the model to account for all of the new interventions.

The new worksheet should follow the same general methodology as the rest of the model, scaling up coverage targets and multiplying them by unit costs to derive resource estimates. Once resource estimates have been calculated, formulas on the Summary page should be updated to include them.

Users may wish to consider a set of systemic interventions. The user can add a comprehensive intervention to calculate this cost by creating new intervention calculations in a new worksheet. There is no single right way to model these additional costs; instead, there are many plausible methods. The simplest method is to calculate the systemic costs as a straight proportion of total direct costs. At the other end of the spectrum, users could identify a comprehensive list of specific systemic roles (e.g. district administrators, assessment experts, procurement and budgeting specialists) and use input quantity ratios such as judges per awareness program to derive the total number of judges needed. Then unit costs can be used to derive a total resource estimate. Whatever method is chosen, it should distinguish capital from recurrent expenditures.

Adding sub-regions

To calculate results for additional regions (e.g. provinces, or separate urban/rural models), the user should create one copy of the model for each region to be assessed. One of these copies should be designated a master copy. The master copy is used to aggregate investment needs across all of the regions. Each of the models should correspond to a single region and named accordingly (e.g. gender_rural.xls, gender_urban.xls).

In each model, the user should enter population data, coverage targets, input quantity ratios, and unit costs specific to the region. Each region’s model will then generate an individual estimate of total resource needs.

Next, the user needs to add up the resource needs across regions. This is done in the master copy’s Region Aggregator page, where the user should copy and paste “as values” the capital, recurrent and total costs for awareness of sexual and reproductive health, helping transition of girls to work, encouraging political participation, and ending violence against women into the corresponding line in the summary page.⁶ It is important to paste “as values” so that the actual

⁶ The “Paste Special” function of “paste as values” should be used to transfer resource requirements from the region-specific models to the master copy.

numerical values get pasted rather than formulas, avoiding broken links. The Region Aggregator page then helps the user calculate the total resource requirements across all regions.

NB: When working with multiple regions, the user will need to take special precautions to ensure that changes to the model architecture of one region are reflected identically in the others.

KEY POINTS:

1. Interventions can be dropped, changed, or added. Each of these operations is simple, but will require careful attention to make sure that adjustments are reflected accurately in worksheet calculations.
2. Regions can be added in order to permit users to create separate cost estimates for different parts of the country, e.g. rural vs. urban, or different sub-regions. These calculations can be aggregated by pasting them into the Region Aggregator page of the master copy

PART FIVE: Checking Results and Trouble-Shooting

Checking Results

Once the user has derived results from the needs assessment model, how can s/he tell whether the results are realistic?

One way is to check the per capita resource needs against other countries where needs assessments have been conducted. Results from five low-income countries can be found in Chapter 3 of the Millennium Project *Handbook* and on page 244 of *Investing in Development*. In general, these findings suggest that annual per capita expenditures should fall within the range of \$2 to \$3 each year between 2005 and 2015. Of course, the actual number will depend on how far away the country is from achieving the target, what target coverage rates are chosen, etc; but this range provides a reasonably robust basis for comparison.

Other ways to check results include, examining the path of per capita expenditures between 2006 and 2015, and running internal checks on cost drivers:

- *Path of per capita expenditures.* One way to check for major errors is to study the 2006-2015 path of per capita expenditures. If there are any unusual spikes or troughs, or other patterns, users may need to re-examine scale-up paths
- *Internal checks on cost drivers.* Another way to assess results is to analyze the major drivers of total resource needs. Cross-country comparisons suggest that capital costs typically account for between 15% and 40% of total costs, and non-salary recurrent costs typically make up between 25% and 45% of total costs. If the user finds large variances in one or more of these costs, s/he may wish to re-examine some of the unit costs, the outcome/coverage targets, or input quantity ratios and compare them to international standards to identify the source of variance.

Trouble-shooting

During the course of the needs assessment, users may also encounter a number of modeling issues and problems. Here, we discuss some of the most common and identify simple tools that may help resolve them.

Unrealistically high or low resource estimates

After comparing results to comparable estimates, the user may find that the model has produced unrealistically high or low values. A bit of detective work will be in order. The user should ask:

- Are all of the coverage and input quantity ratio targets accurate?
- Are the unit costs reasonable?
- Are there any large spikes or troughs in the pattern of resource needs? (this might indicate a typographical error in a single year's entry).
- Are recurrent and capital costs calculated correctly? (if the calculations are mixed up, based incorrectly on incremental vs. total figures, results may be unrealistically high or low).
- Are results highly sensitive to small changes in variables? If so, users should be very careful in interpreting results.

#VALUE

If the phrase “#VALUE” appears in a cell, the problem is most likely that the user has entered an inappropriate value for the variable, e.g. text in a cell that only accepts numbers. If inappropriate values are entered into cells that are used to calculate values in other cells, all the dependent cells will also display the #VALUE symbol. If confronted with this problem, the user should click on a cell where the #VALUE symbol is displayed and go to the “Tools” menu, select “Auditing,” and click on “Trace Precedents.” By following the arrows backward to the cell with the original error, the user should be able to identify and correct the problem.

#REF

If the phrase “#REF” appears, a link has been broken. It is likely either that a cell that was used to calculate other cells has been deleted, or that cells have been improperly moved, disturbing the link to dependent cells.

If the #REF symbol has just appeared, go to the “Edit” menu and select “Undo,” which may bring back the deleted cell and solve the problem. If this does not help, select a cell where the #REF symbol appears and try to assess what cell might have been deleted or moved. If, for example, the cell is the sum of various infrastructure costs and there is one #REF symbol in the summation formula, it is likely that the missing cell is also an infrastructure entry. Going through this process may help the user identify the problem.

Many #REF problems can be avoided by following two simple rules. First, before deleting any cell, select it and use the Auditing function (under the “Tools” menu) to “Trace dependents.” If there are any dependents, make sure that their formulas are appropriately modified before deleting the cell.

Second, when moving cells or rows from place to place, always CUT (from the “Edit” menu) and then PASTE (also from the “Edit” menu). Never “COPY” and paste. Cutting and pasting updates all of the links; copying and pasting does not.

#DIV/0!

The “#DIV/0” symbol means that somewhere, a quotient function is being performed where the denominator is zero, yielding an undefined result. When this occurs, examine the formula and check the precedent cells to ensure that the values are correct. More often than not, the “#DIV/0” symbol appears when an entry has been accidentally deleted and used as the denominator of in a quotient formula, yielding this readily resolvable problem.

KEY POINTS:

1. Results can be checked against assessments from other countries. A reasonable range for annual per capita investment needs between 2006 and 2015 is around \$2 to \$14.
2. There are a number of common spreadsheet mistakes that result in error messages. Using the “Trace Precedents” auditing function can help identify and resolve some problems. Proper Excel technique can help prevent others from occurring in the first place.
3. When results appear unrealistic, backtrack and check the accuracy and plausibility of assumptions and inputs; check for technical errors; and assess the overall sensitivity of the model to small changes in key variables.

PART SIX: Other Resources and Further Reading

There are a number of different models and resources available to inform work on modeling education costs, and we encourage users to study and absorb as many of them as possible.

On the UN Millennium Project web site, users will find copies of models completed by other country teams. In particular, the modeling tools developed by the Tajikistan team are useful to understand how different countries have adapted models to local systems and circumstances. The page for needs assessment tools can be located at the following URL:
<http://www.unmillenniumproject.org/policy/needs03.htm>

Investing in Development, the report of the UN Millennium Project provides an overall action plan for meeting the Millennium Development Goals and specifically addresses the critical importance of MDG Needs Assessments. *Investing in Development* is available at www.unmillenniumproject.org.

Taking Action: Achieving Gender Equality and Empowering Women, the report of the UN Millennium Project’s Task Force on Education and Gender Equality, identifies cases and quality parameters from a variety of policy contexts that may be useful in determining input quantity ratios and other targets.

The UN Millennium Project *Handbook* features extensive information on the process of developing MDG-based national development strategies, including needs assessments. In particular, Chapter 3 focuses on needs assessment tools and discusses education sector assessments in detail. An electronic version of the *Handbook* can be accessed at <http://www.unmillenniumproject.org/policy/handbook.htm>.