

Measuring Child Well-Being in the Mediterranean Countries —Toward a Comprehensive Child Welfare Index

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INTRODUCTION

Approximately 164 million children ages 0–14 live in the 34 Mediterranean countries. Seventy percent of these children live in North Africa and the Middle East, and the other 30 percent live in Central and Eastern Europe. Across these sub-regions, the conditions children live in differ widely - some of the countries are among the richest of the world, for example, France and Italy, whereas others, like Yemen, are among the poorest of the world. Also, human development varies widely and some countries have attained higher levels of human development than others.

The objective of this paper is to suggest a tool (or tools) to measure how all Mediterranean countries are moving toward promoting and achieving child welfare. Investing in childhood is the natural starting point for investing in human development. To meet this objective, we developed and propose a series of child welfare indices.

In section 1, we summarize some early attempts to develop a measure of human development that goes beyond economic well-being to consider all aspects of human development. We focus on the Human Development Index and its derivative indices. Next, we discuss the importance of adding distributional information to indices that are based only on averages. Finally, we focus on child poverty as an important indicator of child welfare and we consider several studies of child poverty conducted in Mediterranean countries.

In section two, we address current efforts worldwide to monitor child welfare at both national and international levels. In most cases, these initiatives target a series of basic indicators, but do not combine these indicators into one comprehensive index. We extensively review the most relevant representations of tools, or indices, that are available to assess child welfare. The nature of these indices differs according to their purposes, and some indices are more comprehensive than others, which may focus only on one specific area.

In section three, we propose several alternative child indices that are analogous to the Human Development Index and its derivatives. As an

exercise to demonstrate the information that can be gained by adopting a child-focused approach in the use of socio-economic indicators, we calculate the Child Welfare Index. The objective is to identify how well countries in the region promote and achieve child welfare compared with their achievements in overall human development. We next present three alternative indices for comparing differences between boys and girls, age groups, and extent of child deprivation.

This paper contributes to the growing literature on children's welfare and suggests alternative indices to monitor children's welfare. The indices proposed offer some direction for understanding which countries in the region lag behind in efforts to improve the welfare of children. The intent is to monitor child welfare on a yearly basis using simple indicators that are easily and readily available. Still, as with other aggregate indices, the alternative approaches proposed here conceal disparities within countries. In order to promote a more comprehensive and accurate monitoring tool, each year a specific topic could be highlighted –that incorporates data on child welfare by ethnicity, economic status , and sub-region.

1. MEASURES OF WELL-BEING

1.1 ALTERNATIVE AGGREGATED MEASURES OF WELL-BEING

Section 1.1 of this chapter briefly introduces early attempts to develop a measure of human development, which goes beyond economic well-being. It explains how the Human Development Index (HDI) was created to reflect dimensions of well-being other than income. It also warns users against the possible limitations of comprehensive well-being indices. References to how these measures can illustrate the construction of a child well-being index will be made throughout.

1.1.1 The Physical Quality of Life Index

The most widely used indicator of the average level of well-being of a population in a country is Gross Domestic Product (GDP) per capita. The GDP represents the total value of all goods and services produced in a country. In other words, it is the sum total of all resources available to buy whatever “goods” the country’s population wants. These goods include all market goods, such as food, clothing, housing, or automobiles. They also include private desirables, such as good health and high education levels, and public goods, such as infrastructure, clean air, and national security. In a democratic country, in which a government represents the preferences of the population, and in which all markets (factor markets, financial markets, the labor market, and the markets for goods and services) work well, one could argue that GDP per capita is an adequate index to represent the average level of well-being of the population.

But, of course, such an ideal country does not exist. In dictatorships, where large sums of money are spent on national security, the level of well-being of the population may be well below that of a country with a similar GDP, but with less military expenditures. In countries where the political system is captured by a few elites, most resources may accrue to the rich, leaving lots of people in poverty, though the per capita GDP may be high. Inefficient governments may collect a lot of tax money, but may fail to deliver high-quality public education and health services.

In all such cases, the average amount of resources available per person is a poor indicator of average levels of well-being¹.

The shortcomings of GDP per capita have long been recognized. This recognition has led to a long search for more comprehensive indicators that capture some of the aspects of well-being other than income. This paper is not the place to review all these efforts, but we do find it useful to start by paying some attention to an early attempt to construct such an index, which will help to underscore what is, and is not, possible when combining various dimensions of well-being into a single number. This early attempt is called the Physical Quality of Life Index, a forerunner of the HDI, to which we will return later.

The Physical Quality of Life Index² (PQLI) combines three dimensions of well-being that are deemed to adequately represent (or be a proxy for) an overall notion of well-being of a country's population. These three dimensions are (i) infant mortality, (ii) life expectancy at age 1, and (iii) basic literacy. It is useful to look at some of the arguments for the choice of these three indicators:

“We assumed that people generally prefer to have few deaths among the infants born to them and that under almost all circumstances people prefer to live longer rather than shorter lives. We also decided that – even if the desire for literacy per se is not as widely shared – literacy could serve as a surrogate for (although it does not guarantee) individual capacity for effective social participation” (*Morris 1979, p. 3*).

Morris (1979) further argues in favor of these three dimensions because the resulting PQLI meets the following criteria:

The Quality of Life Index:

1. Should not assume that there is only one pattern of development.
2. Should avoid standards that reflect the specific values of societies.
3. Should measure results, not inputs.
4. Should be able to reflect the distribution of social results.
5. Should be simple to construct and easy to comprehend.
6. Should lend itself to international comparisons.

By taking the three measures (infant mortality, life expectancy at age 1, and basic literacy), the PQLI is constructed as follows:

- First, give a country's performance on each of these dimensions of well-being a score on a scale from 0 (the worst possible outcome) to 100 (the best possible outcome).
- Second, add these scores and divide them by three, to obtain the PQLI (see *table 1.1* for an example of the PQLI for three countries).

Table 0.1 Examples of the PQLI for Three Countries

Country	Life Expectancy at Age 1		Infant Mortality		Literacy		PQLI ³
	Years	Score	Per 1,000 live births	Score	%	Score	
Egypt	57	50	116	51	26	26	43
Lebanon	67	75	59	77	86	86	79
Italy	73	86	21	94	94	94	92

PQLI³, The Physical Quality of Life Index
Source: Adapted from Morris (1979), table 3, p. 45.

Two features of this simple procedure are worth mentioning because they are inherent to all such efforts to construct composite indices. First, in order to score each of these outcomes on a scale of 0 to 100, the “best possible” and “worst possible” outcomes need to be defined. While 100 percent literacy can be defined as the best possible score for basic literacy, no such objective measure is available for the best possible life expectancy or the worst possible infant mortality rate⁴. Thus, some more or less arbitrary boundaries have to be set for the scales of these three dimensions of well-being. This arbitrariness will be reflected in the final PQLI. Other choices would have led to a (often slightly) different index. Second, the three scores get an equal weight in the final index. That, too, is an arbitrary choice. Implicitly, this puts a relative value on each of the three dimensions of well-being. Later on, we will show how such implicit value judgments can lead to unexpected, and undesirable, implications.

A number of comments can be made about this early attempt to replace GDP per capita by an index that better captures the average overall

well-being of a population. First, while the measure appears comprehensive, incorporating three important aspects of well-being, the first two (infant mortality and life expectancy) are closely related. Second, though three dimensions of well-being are included, many are not, most notably per capita income. This appears to be a serious shortcoming. While it is possible to argue that “money is not everything”, it is hard to argue that “money does not matter.” The level of total resources available in a country per capita, even if unequally distributed or in part squandered on undesirable public projects, does give a rough indication of the average level of well-being of a population that cannot be captured by health and education indicators alone.

We will now turn to a measure that acknowledges the importance of health and education indicators, but combines them with GDP per capita to capture other aspects of well-being. This indicator is the HDI.

1.1.2 The Human Development Index

Thirteen years after the PQLI was first presented in a preliminary report⁵, the United Nations Development Program (UNDP) published, in 1990, its first Human Development Report. The central message of this report was: *“while growth in national production (GNP) is absolutely necessary to meet all essential human objectives, what is important is to study how this growth translates – or fails to translate – into human development in various societies”*. (HDR 1990, p.iii)

Following basically the same arguments as Morris against the use of GDP per capita as the sole indicator of human well-being, but acknowledging that “a decent living standard” (read “income”) is also important, UNDP proposes as the basis of the HDI the following three indicators: life expectancy (at age 0), literacy, and GDP per capita. Again, these three indicators need to be scored on a scale from the worst to the best possible outcome and then combined in one index⁶. The resulting HDI is subsequently used to rank countries from good to bad performers. The most interesting outcome of this exercise is to compare this ranking with a ranking based on GDP per capita alone. *Table 1.2* shows the outcome of such a comparison for the Mediterranean countries.

Table 0.2 GDP Per Capita and the HDI

Country	GDP Per Capita (PPP US\$)	GDP Per Capita Rank	Human Development Index	HDI Rank	Country	GDP Per Capita (PPP US\$)	GDP Per Capita Rank	Human Development Index	HDI Rank
Italy	24,670	1	0.916	3	Bulgaria	6,890	17	0.795	14
France	23,990	2	0.925	1	Tunisia	6,390	18	0.74	23
Cyprus	21,190	3	0.891	5	Macedonia	6,110	19	0.784	15
U.A.E.	20,530	4	0.816	13	Algeria	6,090	20	0.704	28
Spain	20,150	5	0.918	2	Iran	6,000	21	0.719	27
Qatar	19,844	6	0.826	10	Bosnia	5,970	22	0.777	17
Israel	19,790	7	0.905	4	Turkey	5,890	23	0.734	25
Kuwait	18,700	8	0.82	11	Romania	5,830	24	0.773	18
Greece	17,440	9	0.892	6	Lebanon	4,170	25	0.752	21
Slovenia	17,130	10	0.881	7	Jordan	3,870	26	0.743	22
Bahrain	16,060	11	0.839	9	Albania	3,680	27	0.735	24
S. Arabia	13,330	12	0.769	19	Morocco	3,600	28	0.606	31
Malta	13,160	13	0.856	8	Egypt	3,520	29	0.648	30
Oman	12,040	14	0.755	20	Syria	3,280	30	0.685	29
Croatia	9,170	15	0.818	12	O. Palestine	2,788	31	0.731	26
Libya	7,570	16	0.783	16	Yemen	790	40	0.47	32

Notes: PPP US\$ refers to purchasing power parity, GDP per capita PPP US\$ is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as \$1 has in the United States. U.A.E. stands for United Arab Emirates; S. Arabia for South Arabia; and O. Palestine for Occupied Palestine Territories. Two countries are missing, Iraq and Serbia.

Source: Human Development Report (2003)

This table clearly shows that Bosnia, Greece, Malta, Macedonia, and Romania, among others, do far better on their human development ranking than on their income ranking, showing that they have directed their economic resources more toward some aspects of human progress. But, Algeria, Oman, Saudi Arabia, and United Arab Emirates, among others, do considerably worse on their human development ranking than on their income ranking, showing that they have yet to translate their income into corresponding levels of human development.

Conclusions such as the ones underlined above, which are drawn from the comparison of rankings on alternative indicators, show how comprehensive indicators of well-being can be used also for policy purposes. In section 2, we will propose, as one of various options, the construction and use of a child welfare indicator similar to the HDI. But, first, we will show how, over time, the HDI has been altered to include other important aspects of a society's well-being. These extensions, too, will prove to be useful for the construction of a comprehensive child welfare index.

1.1.3 Extensions of the Human Development Index⁷

In the years since the first presentation of the HDI, a number of refinements and extensions have been made that can serve as inspiration for the design of a Child Welfare Index. Some refinements are minor. For instance, the adult literacy indicator of the original HDI is replaced by a weighted average of adult literacy and school enrollment data to also represent the “knowledge” dimension for younger cohorts. Other changes have led to indices that capture different dimensions of well-being.

Whereas the HDI *index* is a positive index in the sense that it represents *achievements*, the Human Poverty Index (or HPI-1) measures *deprivations*. The three dimensions of the HPI-1 are:

- A long and healthy life — vulnerability to death at a relatively early age is measured by the probability at birth of not surviving to age 40.
- Knowledge — exclusion from the world of reading and communication is measured by adult literacy.
- A decent standard of living — material deprivation is measured as the un-weighted average of two indicators: the percentage of the population without access to clean water, and the percentage of malnourished children (low weight for age).

The average of these three indicators constitutes the **Human Poverty Index**. This index is deemed to be appropriate for measuring deprivation in developing countries. In recognition of the fact that

deprivation is a relative concept, a separate human poverty index is defined for use in OECD countries (the HPI-2). In addition to the three dimensions of well-being captured in the HPI-1, the HPI-2 adds social exclusion as a fourth component of well-being. The rate of long-term unemployment is used as the indicator for social exclusion⁸.

Another approach to creating an overall index of well-being is the one that captures inequality between the sexes. The so-called **Gender-Related Development Index** (GDI) does just that. It goes without saying that gender inequality is also an important issue when the focus is on children and youth. The GDI uses the same three indicators as the HPI-1 (longevity, knowledge, and a decent standard of living), but tries to capture the differences between the sexes for those indicators. These differences are then combined to form the GDI. Finally, we mention the **Gender Empowerment Measure**, which focuses on gender differences in political and economic participation.

From the above brief description it should be clear that the development of a Child Welfare Index is, in principle, feasible and analogous to the HDI and its various refinements and extensions. It should by now also be clear that many choices are being made for the construction of such an index. These choices regard the type of indicators that will be included in the index (and, thus, which indicators are *not* included), how these indicators are being measured or “scored,” and how they are combined into one comprehensive index of well-being. It is well recognized that each of these choices will have an impact on the end result; that is, different choices lead to different country rankings. Less recognized is the fact that *implicit* in these choices are value judgments about the relative importance of the included dimensions of well-being. This point can best be clarified with an example.

In 1990, in Kenya, life expectancy was 59.4 years, the adult literacy rate was 60 percent, and GDP per capita was US\$794. The resulting HDI for Kenya was 0.48⁹. If we increase life expectancy with 1 year, to 60.4 years, the HDI increases to 0.49. The same increase can be achieved by increasing GDP per capita by US\$70 to US\$864 (see *table 1.3*, first three rows). Thus, in terms of the HDI, 1 additional life year is equivalent to \$70 more income.

Now we take a hypothetical country with the same life expectancy and enrollment rate as Kenya in 1990, but with a much higher GDP per capita, say US\$3129. This country has an HDI of 0.63. One additional year of life expectancy increases the HDI to 0.64. The same increase in the HDI can be achieved by increasing GDP per capita to US\$3,404, or by US\$725 (see *table 1.3*, last three rows). From this example, one could conclude that an additional year of life is worth US\$70 in a poorer country and US\$275 in a richer country.

Table 0.3 Kenya's HDI Calculations and Re-Calculations

Life Expectancy	GDP Per Capita*	HDI
59.4	794	0.48
60.4	794	0.49
59.4	864	0.49
59.4	3,129	0.63
60.4	3,129	0.64
59.4	3,404	0.64

Note: Adult literacy is always equal to 60 percent in this calculation.

These kinds of value judgments are implicit in the assumptions made to construct the HDI (and similar indices). We believe, however, that it would be wrong to use the HDI in this way. Indices such as the HDI are meant to get a measure of well-being that is more comprehensive than GDP per capita. They can be used to judge how well countries do if various dimensions of well-being are considered simultaneously. And, although all indices will necessarily imply relative value judgments (e.g., between an extra year of life and a higher income), they were not constructed, and should not be used, for this purpose¹⁰.

This concludes our discussion of the HDI and related aggregate welfare indices. In section 2 we will show how we can adapt these indices to represent child welfare levels. But, first, we will discuss the importance of adding *distributional* information to what would otherwise be indices based on averages alone.

1.2 DISTRIBUTION OF WELL-BEING WITHIN AND ACROSS POPULATIONS

The original HDI pays little attention to distributional issues¹¹, though the HPI-1 emphasizes differences in well-being between the poor and the non-poor, and the GDI underscores male–female differences. Given that countries can vary widely in their levels of inequality (between the poor and the non-poor, among regions, between males and females, among ethnic groups etc.), it is important to combine indicators of *average* welfare levels with *distributional* information. Comparative analysis of *averages* across countries might be misleading as *averages* conceal differences within the countries. A country with a very unequal distribution of welfare may rank similarly to a country with the same average income per capita but a more equal distribution of welfare. Thus, it is important to look at the dispersion of the distribution of welfare.

Unfortunately, data on distributional issues– with the exception of income distribution- are not as available as aggregate averages. Whereas the importance of income inequality and its relation to demographics are well documented, other distributional dimensions need to be looked at. For instance, it has recently been shown that progress in the national average for child mortality rates could be accompanied by a widening gap between poor and better-off children. Wagstaff and Watanabe (2000) demonstrate that inequalities in malnutrition appear to vary across countries and that the rate of malnutrition declines with living standards (see Table 1.4). The authors calculated an index for measuring inequalities in malnutrition - the concentration index -, which ranks children by their household's equivalent consumption and captures inter-country comparisons of inequalities that cannot be obtained from quintile comparisons¹².

Studies by Wagstaff and Watanabe (2000) and Gwatkin (2000) show that some countries can do well in both national averages of child malnutrition and distribution of malnutrition, whereas many others perform well in one dimension and poorly in the other. These studies underscore the fact that socioeconomic inequalities in child malnutrition exist and that there is a strong positive relationship between health

inequality and average income—in which higher per capita income is associated with rising levels of health, but also with higher levels of health inequalities (Wagstaff 2002, p. 3).

Table 0.4 Rates of Under-5 Stunting and Underweight, by Quintile of Equivalent Consumption

Country	Stunting					
	Poor	2	3	4	Rich	Average
Egypt	0.20	0.17	0.14	0.18	0.16	0.17
Morocco	0.39	0.36	0.31	0.20	0.15	0.28
Romania	0.25	0.28	0.23	0.24	0.20	0.24

Country	Underweight					
	Poor	2	3	4	Rich	Average
Egypt	0.10	0.14	0.10	0.09	0.10	0.11
Morocco	0.23	0.20	0.16	0.10	0.06	0.15
Romania	0.09	0.07	0.06	0.07	0.06	0.07

Source: Adapted from Wagstaff and Watanabe (2000), p. 23.

Findings from this study show that children in the poorest quintiles had the highest rate of malnutrition - however malnutrition was measured. The study by Wagstaff and Watanabe focuses on inequalities among income groups, but there are other ways to examine inequalities in sub-sectors, such as ethnic affiliation, health condition, geographic location, occupation, or gender (Gwatkin 2000). These forms of categorizations can provide valuable information.

Another way of looking at distributional issue is to look at differences in inputs or resources.

Uneven outcomes in health and education among socioeconomic groups can be the result of public policies and programs. Targeted policies or social welfare programs can balance the effect of inequalities. A study by Gwatkin, Wilcox, & Wray (1980) showed that well designed targeted and implemented programs can reduce infant mortality and child mortality rates. Policies and programs are needed to promote a more equitable distribution of health among the poor. Gwatkin et al.

(1980) explained that to rely on economic progress alone is not necessarily the best strategy to ensure better health outcomes.

One way to judge the efficacy of public programs is to look at the incidence of the benefits of the program. A study by Mehrotra, Vandemoortele, and Delamonica (2000) covering 30 countries shows that the distribution of the benefits from public spending on education and health are biased towards the richest 20 percent of the population. Van de Walle (1998), who measures inequality inputs in the education sector in Tunisia, shows that the incidence of spending on primary education is highest for the poorest income groups - with a tendency to fall as income rises - and that spending on tertiary education accrues primarily to the very wealthiest Tunisians. However, in the aggregate measure, when secondary schooling expenditures are also factored in, public spending in the education sector is found to favor those who are better off (Van de Walle 1998, p. 368). These exercises reveal how public spending can be distributed across key strategic socioeconomic groups in such a way that it promotes inequalities or prevents them.

An interesting approach to measuring the performance of countries in a sub-sector of the economy, rather than their overall performance, is the one pioneered by the World Health Organization (WHO) in its World Health Report of 2000. In this report, WHO differentiates between the objectives of the health system, and the functions this system performs. In both cases, both *levels* of performance and *distributional issues* are considered to be important.

The ultimate objective of a health system is, of course, good health of the population. Indeed, the *goodness* (result) of the system is a key indicator. But this indicator is immediately followed by the *fairness* of the system. Fairness, in this case, is defined as the smallest feasible difference in health among individuals and groups. Fairness could refer to the difference in health status between the poor and the rich, but also between men and women, urban and rural dwellers, etc. Thus, goodness and fairness outcomes are key indicators of the performance of the system, as are measures of responsiveness and fairness of financial contribution. In a nutshell, responsiveness refers to the way the system lives up to people's expectations (e.g., short waiting times, clean

hospitals), whereas a fair system of health care financing means those financial contributions are “according to ability to pay.” It goes without saying that a lot of work and data collection go into the “measurement” of these indicators, but the general idea is clear¹³. In addition to the three objectives of the system (responsiveness, fair contribution, and – ultimately - good health), WHO defines four functions on which the system is also judged: stewardship, creating resources, financing, and delivering services.

Table 1.5. Shows how Mediterranean countries perform on the overall WHO system Performance ranking (based on performance on eight indicators).

Table 0.5 Most Recent Rankings on the Comprehensive Health System Performance Index, for the Mediterranean Countries

Country	On Level of Health	Overall Health System Performance	Country	On Level of Health	Overall Health System Performance
Italy	3	2	Tunisia	16	17
France	4	1	Macedonia	24	24
Cyprus	10	7	Algeria	15	21
U.A.E.	8	9	Iran	20	27
Spain	5	4	Bosnia	25	25
Qatar	18	15	Turkey	12	20
Israel	13	10	Romania	33	28
Kuwait	23	16	Lebanon	31	26
Greece	7	6	Jordan	32	22
Slovenia	21	12	Albania	22	18
Bahrain	11	13	Morocco	9	11
S. Arabia	6	8	Egypt	14	19
Malta	2	3	Syria	28	32
Oman	1	5	O. Palestine		
Croatia	19	14	Yemen	27	33
Libya	30	23	Iraq	26	30
Bulgaria	29	29	Serbia	17	31

Source: Adapted from World Health Organization (2000), p. 152.

We will not further comment on the rankings in *table 1.5*, but, rather, use the example to ask the question: Would a performance measure for a country's "children system" be feasible?

Countries have a health system, but not a children's system. Still, defining where the boundaries are of a health system is not straightforward. For instance, should traffic safety measures be included? What about environmental protection measures, or the lack thereof? The same types of questions arise if one wants to define a "children's system" (i.e., the sum total of all measures and efforts in a country that benefit the well-being of the country's children). Of course, it is more difficult to answer these questions in order to define a "children's system," because the children's system involves parts of the public and private health system, almost all of the education system, general measures to increase family welfare (e.g., child support or child-friendly tax laws), children's rights issues, and the overall state of well-being of the country (or region) where the child grows up. But, conceptually, it is quite feasible to define the system and to construct a performance index along the lines of WHO's Health System Performance Index.

At this moment, the data for such a comprehensive system performance index are not available, certainly not for all countries¹⁴. But, it is useful to take a look at some of the possible indicators that form the basis for such a comprehensive index.

Just a few examples of possible indicators that can be used to build this system performance index:

- Male/female infant or child mortality
- Children's access to clean water
- Immunization coverage
- Male/female enrollment rates in preschool and in primary and secondary school
- Primary-school completion rates
- Access to child care
- Child allowances, or tax deductions
- Number of children growing up in single-parent homes

- Child labor
- Teenage pregnancy
- Juvenile criminal behavior
- Children in poverty.

In this concise review of alternative ways of looking at distributional issues, we highlight that it is important to look at the whole dispersion of the distribution of welfare. In the section that follows we focus on child poverty. Poverty is perhaps one of the most important factors that impacts children's overall well-being and childhood poverty may have lifelong consequences.

1.3 CONSTRAINTS TO WELL-BEING: POVERTY

Poverty constitutes a lack of economic, social, physical, environmental, cultural and political resources that are vital to all people to develop to their fullest potential. Research shows that the impact of poverty on the outcomes of children is particularly pervasive. Poverty may have detrimental effects in almost all areas related to children's healthy development: physical, cognitive, behavioral, social and emotional outcomes. Scarce economic resources at the household level impact children's nutritional status, health, and cognitive development. Low parental income and wages translate into low parental access to services and, thus, poor access to services for children. Reduced access to social services cuts down children's immediate and future opportunities, which, in turn, leads to social exclusion.

A literature review on child poverty shows an existing wealth of studies on the extent, trends, and effects of child poverty, as well as the effectiveness of antipoverty measures in western developed countries, particularly in European and English-speaking nations (Rainwater and Smeeding, 2003; Gordon, Mandy, Pantazis, Permberton and Townsed, 2003; Micklewright, 2003; Vleminckx and Smeeding, 2003; Bradbury, Jenkins and Micklewright, 2000; Smeeding et al., 2000; Bradbury and Janti, 1999; Cornia and Danzinger, 1996; Silva, 1992; Szalai, 1992; Cornia and Sipos, 1991; Saraceno, 1990; Bradshaw, 1990). Most of these reports use data from the Luxembourg Income Study (LIS) - a collection of household survey data which provides demographic, income and expenditure information on three levels household, person

and child – and/or specific national surveys on youth and children (see Bradbury and Janti, 1999; Cantillon and Van den Bosch, 2002; Jeandidier and Albiser, 2001; Smeeding, Rainwater, and Burtless, 2000; and other authors in the Luxembourg Income Study Working Paper Series). Unfortunately, such data are not always available for developing nations.

Given that the number of studies and reviews which address children living in poverty in the developing nations is very limited – with the exception of the ones funded by UNICEF through the Innocenti Research Centre – , we refer to the existing literature on child poverty in rich nations. But, what does this literature tell us that can inform further studies on child poverty in the Mediterranean region?.

First, that the extent of child poverty differs depending on how it is measured. Similar to overall poverty measurements, no agreement has yet been reached on how to measure child poverty. Child poverty is measured either in absolute terms (in US\$, according to the official poverty line) or in relative terms (those who fall below 50 or 60 percent of the average income for the nation in which they live). Some authors have presented more child-specific measures of child poverty. For instance, Bradbury and Janti (1999) compared absolute and relative measures to a third indicator that shows the distance of the poorest children from the average child, that is, the relative mean income of the poorest one-fifth of children (see *table 1.6* for different child poverty measures).

Table 0.6 Children Living in Poverty in Rich Nations-Different Measurements

Country	Total Population Poverty Rate (Most Recent, 1994-2000)	Child Poverty Rates (Most Recent, 1989-1995)			
		U.S. Official Poverty Line	50% of Overall Median (1994-2000)	50% of Child Median	60% of Overall Median
USA	17	18.5	21.9	25.4	30.2
Canada	12.8	9.0	16.3	11.2	23.8
Italy	12.7	38.1	16.6	15.7	26.5
Israel	13.5	45.3	13.3	10.3	24.5
Spain	10.1	47.3	12.2	9.7	20.1
France	8	17.3	7.9	6.8	14.3
Romania	8.1		10.0		16.8
Slovenia	8.2		6.9		12.3

Source: Adapted from Bradbury and Janti (1999, p. 18)¹⁵ and Luxembourg Income Study (LIS). Key figures were accessed at <http://www.lisproject.org/keyfigures.htm> on October 20, 2003. Most recent data come from the LIS and measure relative poverty rates. Data for earlier years come from Bradbury and Janti (1999).

Table 1.6 shows that, regardless of the type of measurement used, there are large variations across the developed world in terms of the incidence of child poverty. Bradbury and Janti (1999) demonstrate that countries with higher national income levels are able to ensure that fewer of their children live in poverty. The exception is the United States, where poverty remains high despite the fact that it is the largest industrialized country.

Second, that countries with overall high poverty levels have even higher child poverty rates. This is due partially because children, in general, are more likely to be poorer and to experience persistent poverty than the elderly or adults (Bradbury and Janti, 1999). In contrast, countries with overall low poverty levels tend to have equal or lower child poverty rates. This section does not intend to expand on these two points, but to highlight those factors that are directly related to poverty. Because poverty affects children's well-being and needs to be documented in any report that intends to assess children's well-being in the Mediterranean region.

Studies on children's welfare should look at those factors that prevent and promote poverty. UNICEF (2000) latest Report Card on Child Poverty in Rich Nations presents an overview of factors that have been identified as contributors to child poverty rates. UNICEF explains that the variation in child poverty among OECD countries results from the interaction of a series of factors such as lone parenthood, labor market rates, wage inequalities, and welfare system taxes and transfers (see *table 1.7 for an overview of the conclusions that emerged from the cross national analyses of child poverty*). The report card on child poverty supports Cornia & Danzinger (1997) and Bradbury & Janti (1999) reports which conclude that child poverty needs to be tackled on many fronts.

Table 0.7 A Summary of Child Poverty in Selected OECD Countries

Country	Child Poverty Rate	Lone Parent	Workless Household	Low Wages	Low Social Expenditures
France	7.9	7.7	8.8	13.3	9.1
Spain	12.3	2.3	10.1	19	6.3
Greece	12.3	3.7	4.5	Na	2.9
Canada	15.5	12.2	13.4	23.7	6.8
Turkey	19.7	.7	3.3	Na	.7
Italy	20.5	2.8	7.6	12.5	4.5
USA	22.4	16.6	11.1	25	3.1

Notes: where no number is given, the grouping was estimated. Child poverty is defined as households with income below 50 per cent of the national median (for further details on calculation see source).
Source: Adapted from UNICEF (2000) A League Table of Child Poverty in Rich Nations. Child Poverty in Rich Nations; p. 17.

Redmond (1999) study shows that a child's chances for experiencing poverty increase if the child lives in a large family. Poverty rates for people living in households with four or more children are at least twice as high as those for people living in households with one or two children. A universal welfare regime, however, can establish a series of policies to protect families and children, such as increasing the level of transfers per child with the number of children per household, such as in

France¹⁶. France appears to have greater equity between children from families of different sizes due to the nature of government support, which provides family benefits (Redmond, 1999). Overall, countries with large state expenditures on family benefits and generous per-child allowances appear to have significantly lower rates of overall child poverty and produce greater equity between children in families of different sizes when parental participation in the labor market is taken into account (Redmond, 1999; 14).

Parental employment is another factor related to child poverty. Children who live in households with two full-time employed parents have better chances of not experiencing poverty. However, children of unskilled parents have far greater chances of experiencing poverty and, because the cost of good childcare exceeds parents' potential wage incomes, many mothers decide to stay at home and take care of their children. The choice of taking care of children at home has an important opportunity cost vis à vis the lost wages that a mother can earn (Cantillon and van den Bosch, 2002). Thus, as Smeeding et al. (2000) explain, a country with an egalitarian wage structure tends to have lower child poverty rates.

A comprehensive system of child benefits may compensate for low wages and/or to promote parental employment and prevent children from living in poverty. A number of reports (Feletto, M. 1999; Cantillon & van den Bosch, 2002; Jeandidier & Albiser 2001, Sullivan, D., & Todd, E., 2001) focus on the advantages of a child benefit system that covers the direct costs of having children based on the number of children, age, and access to universal childcare. Eventually, targeted social transfers mitigate the effects of poverty on children.

UNICEF has not yet incorporated data on child poverty in its annual report *State of the World's Children*. The scarcity of data from national and international surveys has been the main reason for this. Developing countries do not have the resources or the means to regularly collect and present data on poverty. In its efforts to fight poverty, the World's Bank has conducted poverty assessment studies to compensate the insufficient number of studies and systematically collecting data on poverty across the developing world through the Living Measurement Standard Survey (LMSS).

In the past five years, the World Bank has conducted poverty studies in a number of Mediterranean countries, such as Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Egypt, Jordan, Macedonia, Morocco, Romania, Tunisia, and Yemen. However, most of these studies have only addressed child poverty in passing. In general, most World Bank poverty studies fall short in presenting child poverty data and analysis. The World Bank only looks at child poverty data as part of poverty demographic profiles. The World Bank's most recent *Strategy Paper on Children and Youth* (2003) presents important suggestions on how issues regarding children, particularly child poverty, should be included in mainstream bank poverty assessments.

The World Bank poverty assessments concur that overall children in Eastern and Central Asia are particularly at higher risk of poverty, particularly if they live in larger households, with three or more siblings (World Bank 1999, 2002a, 2002b, 2003e, 2003f.). According to these assessments, about one third of the poor in Bosnia and Herzegovina are children; in Bulgaria, children younger than ten years old account for almost 20 percent of the poor; in Albania, families with three or more children are specially vulnerable to poverty (World Bank, 1997), and in Macedonia, it is the number of children, rather than the number of adults, that has a strong impact on the poverty status of a household (World Bank, 1999). UNICEF and others, who have been closely monitoring the effects of the transition to a market economy on children, support these conclusions. Sipos and Cornia (1991) explain that poverty is a structural problem that affects children in the region and Branko (1998) affirms that children under age 14 are 20 to 70 times more likely to experience poverty than is the average person.

Gordon and colleagues (2003) -using data from the LMSS and national surveys- conducted a study on child poverty in fifty-four countries, primarily Sub-Saharan countries. Of these fifty-four countries, only three countries -Egypt, Morocco, and Yemen- are part of the Mediterranean region. Gordon and colleagues measure child poverty in terms of deprivations and demonstrate that fifty seven percent of rural children and nine percent of urban children in the Middle East and North Africa live in absolute poverty (that is, suffer from two or more severe deprivations). The authors show that, in Yemen, the poorest

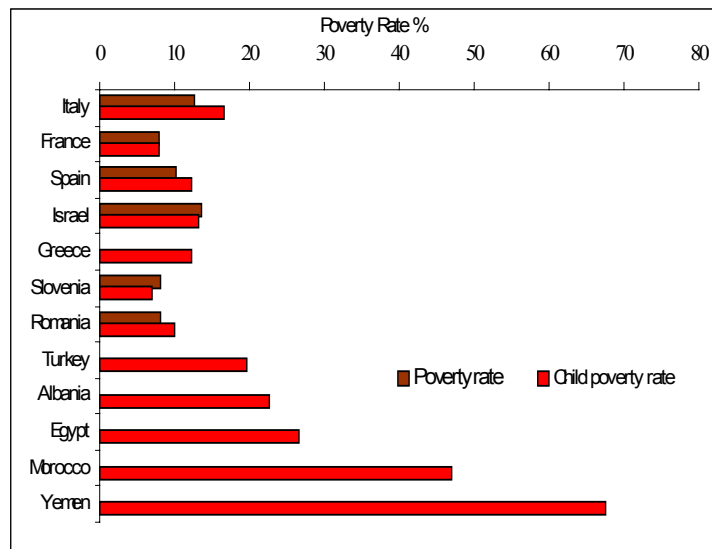
country in the Mediterranean region, about one-half of the total number of children under age 18 lives in absolute poverty.

Similarly, the World Bank (2002b) poverty assessments demonstrate that 46 percent of all children in Yemen, compared with 38 percent of adults, are poor. The incidence of poverty is, thus, 21.1 percent higher among children than among adults (World Bank, 2002b). In Morocco, where 44 percent of the poor are children under age 15 and 25 percent of all children are poor, the incidence of poverty among children is about 1.5 times higher than that among adults. Like in Egypt and Yemen, child poverty in Morocco concentrates in rural areas, where children are approximately 4 to 10 times more likely to be poor (World Bank, 2001b).

Figure 1.1. presents data on poverty for some selected countries in the Mediterranean. Developed Mediterranean countries do better than less developed countries in the region

Nonetheless, poverty directly affects children across poor and rich countries in the Mediterranean region. Regardless of the income level and the extent of child poverty, children are the age group at highest risk and vulnerability.

Figure 0.1 Child Poverty Rates for Some Mediterranean Countries



Notes: child poverty from different sources, extremely cautious when establishing comparisons. Figure is only an approximation since data varies in years/measurement. Source: data for Egypt, Morocco & Yemen refers to absolute child poverty as defined by Gordon et al, (2003) , data for Turkey & Greece as defined by UNICEF (2000); World Bank (1997) data for Albania, data refers to urban areas only; and LIS data for rest of countries, yrs differ.

In sum, exhaustive evaluations should be conducted to collect more data children living in poverty to be able to portray a more accurate assessment of child well-being in the Mediterranean region. Further data on the intensity and duration of poverty experienced by children will promote required responses from governments to support integrated macroeconomic and child-friendly policies. These final comments on child poverty conclude the first section of the paper. The next section focuses exclusively on child well-being measures and assessments.

Notes

(1) One could argue that money never can be an adequate welfare indicator. After all, welfare depends on more than just income. Health is important, as is education, safety, a clean environment, income equality, equality between the sexes, lack of racial or other discrimination, political freedom, etc. Many of these desirable outcomes can be “bought,” or at the very least are more easily obtained if ample financial resources are available.

(2) The key reference is *Measuring the Condition of the World's Poor; the Physical Quality of Life Index*, by David Morris, Pergamon Policy Studies (1979). This reference includes a discussion of earlier attempts to construct comprehensive welfare indices.

(3) Average of life expectancy at age 1, infant mortality, and literacy indices (equally weighted).

(4) For the last, one could argue that 100 percent is the worst possible infant mortality rate, but rates above 250 per 1,000 are never observed at a country basis and, therefore, three-quarters of such a scale would never be used.

(5) *The United States and World Development Agenda 1977*, by John W. Sewell and the Staff of the Overseas Development Council, New York, Praeger Publishers (1977).

(6) For details, see technical note 1, p. 342, in the Human Development Report (2003).

(7) For a more extensive discussion of the HDI and its extensions, see technical note 1 of the Human Development Report (2003).

(8) The first three dimensions are measured slightly different for the HPI-1 than for the HPI-2.

(9) See example for Kenya in the Human Development Report (1990), p. 109.

(10) Economists do try to measure the monetary value of life, either based on behavior (reference), or on answers to direct questions (reference). These efforts are designed for this purpose and produce a “value of life.” The “value of life” that is implicit by the HDI is an unintended implication.

(11) Though by using the logarithm of per capita GDP, more weight is given to an increase in income in low-income countries than in high-income countries.

(12) Wagstaff suggests that, in order to assess socio-economic inequalities in health, a distributionally sensitive measure of population health can be constructed: “One possible set of weights could be the person's rank in the income distribution, since the mean clearly weights everyone's health equally, irrespective of how poor he or she is. One such scheme is to assign the poorest person a weight of 3 and then let the weight decline by $2/n$ (n = sample size) for each person step up the income distribution. Adoption this set of weight produces a distributionally-sensitive measure of population health, or an “achievement index”, that is simply equal to the mean level of health of the population multiplied by the complement of the concentration” (Wagstaff, 2002, p. 27).

(13) For more details on this and subsequent discussion, see the World Health Report 2000 (WHO 2000).

(14) The data were not available for the World Development Report 2000, but the issue was thought to be so important that they were collected.

(15) For most countries, child poverty is about one-third lower when measured against the child median rather than the adult median, because the equivalent family income of the median child is somewhat lower than the equivalent family income of the median person. Nonetheless, the overall ranking of countries is similar.

(16) Redmond (1999) ‘Large Families: Disadvantaged or just different?’ Paper prepared for the Conference Child Well-Being in Rich and Transition Countries Are Children Growing in Danger of Social Exclusion. Luxembourg Income Study Paper. p.13

2. ASSESSING CHILDREN'S WELL-BEING

In the previous section we discussed the widely used comprehensive welfare indices and showed what is (and what is not) possible if one wants to combine various aspects of well-being into one measurement. We subsequently stressed the importance of incorporating distributional information in such an index. This not only could be information on the distribution of income, but also information on the distributional effects of (sectoral) policies or on the distribution of social outcome indicators.

From here on, our focus is solely on indicators and indices of child well-being. We show how, over time, the number of child welfare *indicators* has grown and changed in character. In most cases, these indicators are not combined into one comprehensive index. But we also discuss attempts to use newly developed surveys and use the resulting data to derive one comprehensive child welfare *index*. We draw upon both international and country-specific efforts and studies.

2.1 DIMENSIONS OF CHILDREN'S WELL-BEING

A review of the national and comparative literature on children's well-being shows an extensive list of ongoing studies and reports that monitor children's well-being worldwide. Throughout these studies, children's well-being is presented as a multidimensional concept that can be assessed through multiple dimensions and domains and using a combination of indicators to capture each one of the dimensions.

The literature defines children's well-being as a comprehensive term that encompasses all aspects of a child's life – that is, physical, mental, social, emotional, and economic welfare-, which the child needs to lead a good life. No one single dimension can explain the entire concept of well-being on its own and most reports refer to a common group of dimensions. These dimensions reflect the main social sectors: education, health, and economic welfare. On a recent report by Micklewright and Stewart (2000)¹ on children's well-being in EU and non EU member countries, the authors referred to the three dimensions - economic welfare, health, and education - to assess children's well-being.

The same authors, on another report on children's well-being in the European Union, incorporated a fourth dimension- social exclusion² – to the traditional three dimension. (Micklewright 2000, 2001). The tendency is for countries that have already attained significant achievements in child survival to include social exclusion as a dimension of children's well-being. More and more reports present dimensions that go beyond the traditional framework to incorporate dimensions that have to do with risk or enabling factors of development. The focus has shifted to emotional, psychological, cognitive well-being, and even to subjective measures of well-being. These measures have gone beyond the most common measures of child development, which pertained to deficiencies in achievement, problem behaviors, and negative outcomes, to incorporate indicators that measure both positive attributes and outcomes.

The new alternative frameworks incorporate not only macroeconomic indicators, but also indicators that relate to a child's immediate environment, such as neighborhood characteristics and family formation. For instance, the America's Children Report 2003 (Federal Interagency Forum on Child and Family Statistics, 2003) refers to economic security; health; behavior and social environment; education; and population, family, and neighborhood dimensions (see table 2.1. and next section for further reference to this report). Ben-Arieh and colleagues (2002)³ came up with a new framework of five domains and a suggested a list of 50 indicators, some of which already exist and others of which have to be constructed (see table 2.1). The list of indicators is detailed and broad, covering almost all areas that directly affect children. Unfortunately, such a comprehensive list of indicators will only daunt countries, particularly those that are still unable to monitor social indicators that are fairly commonly used

For the most part, the international debate has focused on which type of social indicators used to assess well-being. The most commonly used indicators clustered under the traditional three dimensions are child malnutrition, child and infant mortality rates (for health), primary gross enrollments (education), and GDP or income (economic). However, as with dimensions, indicators may vary depending on the scope of the assessment (national, local level) and the specific context (developed nations, developing countries).

Depending on the intended purpose of the report and the context which it fits in, certain dimensions and indicators are prioritized or emphasized over others. This is because countries at different stages of human development refer to different indicators to assess welfare. Poor developing nations still need to assess child survival, whereas developed nations can move beyond survival to broader children's issues. For instance, since most EU countries have reached similar low levels of child malnutrition and high primary enrollment rates, instead of depicting enrollment rates for primary school, indicators focus on enrollment rates at age 16, or on results from comparative studies in educational achievement such as the Internal Math and Science Study TIMSS. Further, instead of reporting on under-5 mortality rates, EU reports focus on mortality rates at different ages (Micklewright & Stewart, 2000).

Indicators used to assess the different dimensions have evolved from general to *child-oriented indicators*. Child-oriented indicators use children as their unit of analysis. Micklewright (2000) and others explain that, in order to get a more accurate measure of children's well-being, almost all social indicators can be given a child dimension. For instance, "*GDP per capita is a very crude proxy for average income of families with children. Any serious analysis of trends in average incomes of families would need an indicator more directly related to the household sector, and with that sector to children.*" (Micklewright & Kitty, 1999; p 97) The same applies for unemployment measures: "*Unemployment rate is a standard measure of the weakness of a country's labor market. But of more relevance for child well-being is the proportion of children living in households where no adult works*" (Atkinson, 1998).

Indicators are increasingly becoming developmentally sensitive—that is, they measure child welfare across the different development stages. The report entitled *Well-Being of Canada's Young Children* (2002)⁴ clarifies that measures of well-being that may be relevant at one age may not be appropriate for another age because indicators are age appropriate. Child well-being should be measured "*in a developmentally sensitive way, with measures that reflect the needs, challenges and accomplishments of each developmental stage*"³. (Future of Children,

2002). The report establishes a framework of five domains—physical health and motor development, emotional health, social knowledge and competence, cognitive learning, and language communication—and a set of age-related outcome indicators for each domain.

A factor that should be considered when working with specific population groups is the culturally appropriateness of certain indicators. Distinct cultures might have different notions of what is valuable for children's well-being and, therefore, can lead to different set of indicators or variations in the ranking of indicators⁵. Generally, the range of indicators is expanded to incorporate local cultural beliefs. In a region like the Mediterranean, where there are different cultural groups, an attempt should be made to use indicators that measure well-being which are relevant to local groups. consequently, monitoring a particular cultural group would require using indicators that acknowledge local cultural values as well as indicators which are common to all cultural groups.

Table 2.1 presents a snapshot of different dimensions used to assess child welfare across studies and reports. Because some of these reports include a larger list of indicators per dimensions, at the end of this section we present a table with the most commonly used indicators to represent each dimension. *Table 2.1* shows how the specific purpose of the report defines the selection of particular dimensions of child well-being.

Table 0.1 Dimensions of Children's Well-Being

Study/ Report	Purpose	Dimensions
Traditional Framework	To assess children's well-being	Education Health Nutrition Economic
Micklewright and Stewart (2000)	To assess measurable differences in the well-being of children in non-EU and EU countries	Economic welfare Health Education
Micklewright and Stewart (1999, 2000)	To assess whether the well-being of children in the EU has been converging over the past decade	Health and survival Material well-being Education and personal development Social inclusion
America's Children (2003)	To provide a broad annual summary of national indicators of child well-being	Population Economic security Health Behavior Social environment Education Neighborhood characteristics
The Well-Being of Canada's Young Children (Human Development Resources Department, Canada, 2002)	To build awareness and understanding of how children under age 5 in Canada are doing	Physical health and motor development Emotional health Social knowledge and competence Cognitive learning Language communication
Monitoring and Measuring Children's Well-Being (Ben Arie et al. 2001)	To monitor children's well-being across countries	Children's activities Children's economic resources contribution Civic life skills Personal life skills Safety and physical status

Ben Arie and colleagues (2002) describe the recent trends in definitions and studies of child well-being in the international arena. The authors explain that four major shifts in measuring children's well-being have occurred internationally. First, a shift from survival to well-being, in which measures of child immunization and school enrollment are still important, but have become insufficient for measuring the quality of children's lives today. Second, a shift to positive outcome indicators that complement traditional indicators focused on deficiencies or negative outcomes. Third, a shift from well-becoming to well-being, which reflects the tension between two major frameworks—one which concentrates on preparing children for a productive and

happy adulthood, and the other which concentrates on the present condition of children. Finally, a fourth shift describes the need to measure beyond basic survival needs to focus on new domains such as leisure and recreation and neighborhood or local environments.

As we can see the development of measures of children's well-being has changed and will continue to change. In the next section, we present current national and international efforts to monitor child well-being.

2.2 MONITORING CHILDREN'S WELL-BEING

Worldwide, many developed countries collect and report child data both at the governmental and non-governmental level. Ben Arie and colleagues (2001) present an exhaustive list of past and current national attempts⁶. The objective of these monitoring efforts is to place children's issues at the forefront of the national agenda and to provide a clear picture of how countries are doing in promoting child welfare to inform policy dialogue and reforms. But how do countries monitor children's well-being?

Governments and NGOs monitor children's condition through periodic official and national reports. Most western developed nations such as Australia, Canada, UK, and the United States produce annual national reports and studies on the profile of their children and youth. These reports are accessible way to both policymakers and public in general. The focus and content of these reports varies greatly; some countries give particular attention to one domain—health—whereas others concentrate on specific groups—children at risk or in poverty. Most reports are sectoral; few countries produce an overall comprehensive report because to do so requires an adequate institutional framework⁷. Countries like the U.S. have created inter-ministerial committees to bring together children's issues under one cadre to design child policy across sectors and to monitor children's welfare. In the following sections, we briefly summarize some of the efforts conducted by national governments and international organizations to monitor children's conditions.

2.2.1 Current National Attempts

National efforts have contributed to the international debate on child well-being. The following review of national efforts focuses on the United States and Canada. These countries have produced a number of reports on children's well-being at the national, regional, and state level; an interesting example of what could be done by governments in the Mediterranean region.

Unlike the United States and Canada, not many countries in the Mediterranean region regularly monitor children's well-being at the national and regional levels. This is largely because children's interests are represented across a range of governmental entities, a fact that results in further invisibility in official statistics. Like most other countries around the world, the United States had no single government department specifically responsible for children's well-being until 1994. To overcome this barrier, the U.S. Government created the Federal Interagency Forum on Child and Family Statistics⁸. The purpose of the forum is to monitor children's well-being across different sectors and, in 1997, the forum released its first annual report, *America's Children Key National Indicators of Well-Being*. The report presented a series of child-related indicators drawn from a series of national and state surveys, official statistics, and vital records. Since then, this yearly report presents a compendium of indicators illustrating the promises and difficulties that children confront in the United States.

The *America's Children* report includes a comprehensive selection of 25 key indicators portraying the well-being of American children clustered under four areas or dimensions: economic security, health, behavior and social environment, and education. The report presents data on contextual measures describing changes in the characteristics of the population, family settings, and living arrangements as special features.

Two years after the first release of *America's Children*, the U.S. Department of Health and Human Services published the report entitled *Trends in the Well-Being of America's Children and Youth* (Department of Health and Human Services 2001). This report presents a broader, more detailed view of children well-being in the United States. The

report includes nearly 80 indicators⁹ of well-being clustered in five areas similar to those used by Federal Interagency Forum (see table 2.2.). The main difference between the two reports is that the latter includes a wider range of indicators within each domain. Each of the five dimensions included in *America's Children* are further divided into categories. Both reports reflect governmental efforts in putting together, within one report, relevant data for tracking children's well-being.

The U.S. Government has not been the only active organization monitoring children's well-being in the United States. Since 1990, The Annie Casey Foundation has published the *Kids Count Data Book*. *Kids Count* is a national and state-by-state project to track the status of children in the United States. Data on national aggregates tell us how, on average, the United States—or any other country—does in terms of child-friendly policies and achievements toward better child welfare.

The *Kids Count* report constitutes an important monitoring tool for comparing state performance vis à vis national aggregate measures. The report is intended to estimate the seriousness of the problems children face and to guide policymakers to develop child-friendly policies. Based on the best available data, *Kids Count* reports on 10 measures of education, social, economic, and physical well-being of children state by state. The indicators used reflect a wide range of factors that affect the well-being of children, as well as experiences across a range of developmental stages, from birth through early adulthood. The indicators in *Kids Count* allow legitimate comparisons because they are consistent across states and across time (The Annie Casey Foundation 2003).

Furthermore, U.S. States are also monitoring children's welfare. For example, the *North Carolina Children's Well-Being Index* (North Carolina Child Advocacy Institute 2003) combines critical information about children and youth in North Carolina from many sources into one publication to provide the best available data. The data book presents indicators of well-being in four dimensions: health, education, social, and economic. The indicators selected are quantifiable measures of child, family, and community functioning over two periods of time, a base and most recent year, in order to illustrate the percentage change for each indicator.

Another country that has shown interest in assessing child welfare is Canada. The Canadian efforts are comparable with those of the United States. In Canada, *The Progress of Canada's Children* has been published since 1996 (Canadian Council on Social Development 2002). *The Progress of Canada's Children* incorporates other dimensions besides the three traditional ones (see table 2.2.). The data set used for *The Progress of Canada's Children* relies heavily on the National Longitudinal Survey of Children and Youth (NLSCY) - the country's primary database on children and youth-. The Canadian experience shows that in order to be able to monitor child welfare at the national and state levels, countries first need to adequately collect the relevant data.

The NLSCY led to a series of other initiatives in Canada focused on young children. In 1997, Human Resources Canada funded a national initiative, called *Understanding the Early Years* (UEY), to collect and disseminate data to inform communities about young children's performance along five key learning dimensions¹⁰. The study maps where children in a community live in relation to where the programs and services supporting them can be found (Mustard and McCain 1999). *Table 2.2* summarizes the monitoring attempts by Canada and the United States presented here.

Table 0.2 U.S. and Canadian National Monitoring Reports on Child Well-Being

Report	Domains
America's Children Key National Indicators of Well-Being	Population Economic security Health Behavior Social environment Education Neighborhood characteristics
Kids Count Data Book	(No domains are used, only selected indicators) Percent of low-birth weight babies Infant mortality rate Child death rate Teen death rate by accident, etc. Teen birthrate High school dropout Percent of teens out of school and not working Children in poverty Children living in families where no parent has full-time job Percent of families with children headed by a single parent
The Progress of Canada's Children	Portrait of children and youth Family life Economic security Physical safety Community resources Civic vitality Health status Social engagement Learning Labor force profile of youth

The Canadian and United States experiences demonstrate that implementation of national and local surveys constitute the first step in measuring child welfare. Throughout the developing world, countries have not been as systematic as developed countries in their attempts to document children's well-being. Mediterranean countries interested in monitoring child welfare need to establish the institutional framework that facilitates data collection and dissemination. Governments or the civil society could lead these efforts.

Before we conclude this subsection, we would like to highlight the fact that countries, which are closely monitoring children's welfare, are also engaged in an active debate on the selection of new indicators that better

reflect children's conditions¹¹. In the next subsection we present some ongoing international efforts to monitor child well-being across the developing world. As in previous efforts, the international debate has also focused on the selection of appropriate indicators.

2.2.2 International Efforts

International efforts to monitor children's well-being are as important as national initiatives. UNICEF, the leading international organization working on behalf of children, has the longest tradition in monitoring child welfare across the developing world. UNICEF's flagship report entitled *The State of the World's Children*, which draws data from national and district surveys and compiles these data into one document, is an annual review of basic indicators on children's survival and development. This initiative monitors countries' commitment toward child welfare across the globe. The report ranks countries based on their attainments in reducing under-5 mortality rates (U5MR). Under-five mortality rate highly correlates with measures of health, such as nutrition, underweight, prevalence of communicable diseases, and access to safe water. The under-5 mortality rate is the single most important indicator for ranking child well-being because it is the product of a wide variety of inputs that are heavily interrelated. *Table 2.3* shows the ranking for Mediterranean countries based on their estimated under-5 mortality rate.

Table 0.3 Countries' U5MR Performance Ranked by UNICEF

Country	U5 MR	MR Rank	Country	U5 MR	MR Rank
Italy	6	28	Tunisia	27	13
France	6	28	Macedonia	26	14
Cyprus	6	28	Algeria	49	3
U.A.E.	9	26	Iran	42	6
Spain	6	28	Bosnia	18	19
Qatar	16	23	Turkey	43	5
Israel	6	28	Romania	21	16
Kuwait	10	25	Lebanon	32	9
Greece	5	33	Jordan	33	8
Slovenia	5	33	Albania	30	10
Bahrain	16	20	Morocco	44	4
S. Arabia	28	11	Egypt	41	7
Malta	5	33	Syria	28	11
Oman	13	24	Yemen	107	2
Croatia	8	27	Serbia	19	17
Libya	19	17	O. Palestine	24	15
Bulgaria	16	20	Iraq	133	1

Notes: Countries are ranked in descending order; a higher number means the country is doing better
Source: Adapted from UNICEF. *The State of the World's Children 2003*; p 83). Data for U5MR refers to 2001.

In *The State of the World's Children*, the U5MR data are complemented by a series of economic and social indicators, such as women status, public expenditure on health and education, HIV/AIDS, and others. Not all indicators used in the report are child-centered. This is partly because UNICEF draws from secondary data sources. Most countries are not yet capable of collecting good quality data and are even less able to produce child-centered indicators. Thus, any country making a global attempt to monitor children's welfare will have to rely on available data or, as UNICEF does, fund its own data collection surveys like the Multiple Indicator Cluster Survey.

The Multiple Indicator Cluster Survey (MICS) consists of household surveys and questionnaires that collect data on children that can be incorporated into any national surveys. Since 1998, UNICEF has been

helping countries that have generally weak national statistical reports and surveys to fill many of their data gaps on children. The MICS has enabled almost 100 countries to collect reliable data at the household level¹² on about 63 child-related indicators. In collaboration with the World Bank, the MICS uses a Wealth Index, which derives from questions on ownership of assets and housing, to identify population quintiles and assess disparities in access and outcome of services across different demographic groups.

Another UNICEF international initiative that monitors children's well-being is the Public Policies and Social Conditions — Monitoring the Transition in Central and Eastern Europe and the Commonwealth of Independent States, better known as the MONEE project (Fajth 2002). Unlike the MICS, the MONEE project focuses exclusively on former Soviet Union countries and collects data from secondary sources such as national statistics institutions. Most of these countries in the region have been collecting child-relevant data, but do not have the means to pull these data together. The MONEE project brings together a set of core social indicators that cover the child's environment—the family, school, and community where the child is the key analytical unit of study – to publish its annual flagship regional report. In addition, at the country level, the MONEE project publishes specific country reports to provide a more detailed analysis of children's conditions. In sum, the MONEE project functions as an inter-ministerial committee; it provides the institutional framework—at the regional level—necessary to monitor child welfare.

UNICEF is not the only international agency working on child well-being. Other international organizations and NGOs such as UNESCO or ILO regularly monitor children's condition from a sectoral perspective (education or labor) or concentrating in a specific age group (the Consultative Group on Early Childhood Education). The Education for All and the Convention of the Rights of Children have become important instruments on monitoring children's well-being globally. Recently, the Millennium Development Goals (MDG) has strengthened international efforts to monitor children's welfare. The first six (out of eight) development goals are directly related to children's welfare. As a result, both international organizations and national governments are closely monitoring countries' performances on this set of indicators.

Special attention is on a group of countries who are particularly lagging behind in terms of achieving the goals.

Table 2.4 briefly summarizes and highlights the dimensions covered by each effort. It

shows that most national and international monitoring efforts assess similar dimensions of children's well-being. These dimensions are assessed through a series of indicators, some of which are fairly more common and presented in most reports, whereas others are less common (see *table 2.5* for a list of indicators).

Table 0.4 Summary of Key International Initiatives

Report	Dimensions
The State of the World's Children (UNICEF)	U5MR Basic indicators Nutrition Health Education Demographics Economic Women HIV/AIDS and malaria
MICS (UNICEF)	Basic health and welfare Income support Family environment and alternative care Education Integrated Management of Childhood Illness (IMCI) and malaria Children's rights HIV/AIDS
MONEE (UNICEF)	Health Education Labor market Social security Family support Child protection and crime Household income distribution Macroeconomic issues
MDG	Eradicate extreme poverty Achieve universal primary education Promote gender equality Reduce child mortality Improve maternal health Combat HIV/AIDS and other diseases

Table 0.5 List of Indicators Most and Less Commonly Used

Dimension	Common Indicator	Less Common Indicator
Economic	GDP per capita Poverty Unemployment Population access to safe water	Relative child poverty Adolescent unemployment Parental unemployment Children on welfare Child and family allowances
Health	Infant Mortality rate Child mortality rate Prenatal and antenatal care Low birth weight Life expectancy HIV/AIDS incidence Crude birthrate and death rate	Access to health care Incidence of disease Overweight Disability Chronic condition Eating disorders Sexually transmitted diseases in adolescents Age-specific mortality Cause-specific mortality Accidents and injuries Child examined by doctor in past year
Nutrition	U5MR severe and moderate Vitamin A Consumption of iodinated salt Breastfeeding	Consumption of basic foods Calorie per capita intake by households with different number of children
Social	Adolescence delinquency Teen childbearing Children in foster care	Alcohol consumption Drug abuse Cigarette smoking Child abuse and neglect Child labor Age of women at first birth Divorce rate Percent of households with children headed by single parent
Education	Gross enrollment rates pre-primary, primary, and secondary Net enrollment rates pre-primary, primary, and secondary Youth and Female literacy rate High school completion Drop out rates	Cognitive assessment scores on language and math Out-of-school children School readiness at age 5 Family reading to young children Children not enrolled in school or working
Social Exclusion	Workless household Teen pregnancy Access to education and health	Share of youth who report being satisfied with life

This review shows that measures of well-being involve a choice of a limited set of indicators. Both research and values inform the choice of indicators, and both play a role in determining what defines child well-being. The process of measuring well-being involves making value

judgments about what aspects of life are important to define well-being and what social issues are most pressing¹². Culturally distinct notions of what is valuable in child development lead to varying sets of indicators. Research, on the other hand, indicates the importance of certain indicators as adequate measures of child well-being.

From this analysis, it becomes clear that, in principle, an abundance of child welfare indicators can be defined and measured that can reflect “how well children are doing” in any or every developmental stage of their lives. In most cases, these indicators are not combined into one comprehensive welfare index. There cannot be one single measure of well-being that satisfies all. In addition, when these indicators are presented in regular reports that monitor children’s well-being, they become an effective tool for raising public awareness, achieving national political consensus, and gaining support to push the children’s agenda forward.

However, if these indicators are not only presented within a comprehensive report, but also built into one aggregate measure of well-being, this measure can become a powerful and effective tool for raising awareness about children’s issues in both the national and international arenas. Despite the early and continuing criticism of the limitations of the HDI, this index has contributed significantly to pushing the development agenda forward internationally by motivating countries to invest in their human capital. An index for child well-being could have similar effects.

Before we suggest any alternative child welfare indexes, we will first turn to other attempts that collect information on child welfare and combine this information into one index. As we will see, it makes a big difference if one defines in advance what the purpose of this index is.

2.3 ILLUSTRATIONS OF AGGREGATE MEASURES OF CHILD WELL-BEING

In this section we focus on nine examples of aggregate indices for child well-being. These examples have been selected because they are the closest and most comprehensive representation of different indices that can be developed to assess and monitor child well-being in the Mediterranean region. Unfortunately, our examples are biased in the sense that most of them come from western nations. The first five illustrations are examples of indices developed to assess child welfare at the national level. The last three indices focus on international assessment of child welfare cross-country. As we will see, there are significant differences in the nature of indices – their purpose and their calculations. Some are more comprehensive than others for they assess all dimensions, whereas others focus exclusively on one particular dimension.

a. The Vulnerability Index

The *Vulnerability Index* was designed by Willms (2002) to determine the prevalence of *vulnerable* children in Canada. The definition of *vulnerable child* contrasts with that of *child at risk*—the former refers to children who are currently experiencing developmental problems and whose chances of experiencing poor outcomes in the future are much higher than others. This index is intended to identify the prevalence of vulnerability (poor developmental outcomes) among children of different ages, gender, socioeconomic gradient, and geographic location.

The index is based on measures of learning and behavior at different ages. Using data from the NLSCY survey, Willms (2002) developed a composite measure to establish the proportion of children who experience cognitive and/or behavioral problems. Children are considered vulnerable if they score below cutoff scores in one or both domains (cognitive and behavioral). Performance in each domain is assessed through a series of age-appropriate tests.

The *Vulnerability Index* is a specific instrument that monitors children's cognitive and social outcomes. Positive cognitive and social outcomes

are positively related to current and future children's well-being. The index allows for general comparisons of the effects of various factors across studies and ages.

b. The Early Development Instrument (EDI)

The Early Development Instrument (Janus & Offord, 1999) is a specific index designed to assess children's readiness to learn at age 5. It is part of the national initiative *Understanding the Early Years*. The instrument measures five domains of well-being that are related to school readiness to learn: (i) physical health and motor development, (ii) emotional health, (iii) social knowledge and competence, (iv) cognitive learning, and (v) language communication. It consists of 120 questions, which are administered by a teacher and completed for each child. The EDI can only be interpreted at the group level.

Between 1999 and 2002, the EDI was implemented in 21 communities in Canada¹³. The results from the EDI help policymakers identify areas of need and specific groups of 4-5 year olds who are in a better position to take full advantage of school. Willms and Beswick (2003) adapted the Canadian EDI instrument to develop an international measure of school readiness for children ages 5 or 6, the Early Years Evaluation (EYE). The EYE is a population-based outcome measure that can be used for longitudinal assessment at the community level and can be anchored to other major assessments. It was developed for the World Bank and is intended for developing countries. It is currently being pilot-tested in India and Jordan. A child is rated on a scale from 1 (absent) to 4 (mastered) on each 54 items. The calculations are very similar to those used in the EDI. The EYE, which is culturally sensitive, will allow for comparisons within and between developing countries.

c. The Index of Social Health (ISH)

The Fordham Institute developed the Index of Social Health (Brink and Zeesman 1997) an index that deals with issues of health, mortality, inequality, and access to services in the United States. This index was modified and applied nationally in Canada. The index enables comparisons between a country's economic growth (GDP) and social health. The index measures social and health performance, tracking 16

social issues. Indicators were selected based on their consistency over time, social significance across the age spectrum, and overarching impact on social well-being.

The ISH measures social health across different demographic groups, from infancy to adulthood. It proposes a set of indicators for different age groups—children, youth, adults, and elderly—and for all ages. These components are later combined into one single indicator. Among the indicators used for children are infant mortality rate, child abuse, and child poverty. Among those uses for youth are teen suicide, drug abuse, and high school dropout.

The index is calculated by assessing both improvement and decline against best performance – rather than an ideal standard. To standardize the indicators, each indicator score is measured in comparison with its own best and worst performance over the time period. The best performance is then scored at 10 and the worst performance is set at 0. All other observations are scored within the 0-to-10 scale. The scores derived for the indicators are averaged and expressed as a percentage to derive the aggregate ISH. Each indicator shows a social problem worsening or improving, that contribute to the whole picture of overall well-being (Brink and Zeeman 1997, 12).

d. The Kids Count Report

Kids Count (The Annie Casey Foundation) ranks all 50 U.S. states for overall performance on a set of 10 indicators. States are also ranked separately for each indicator. The ranks are obtained by converting the numerical values for each indicator into standard scores. Standard scores are derived by subtracting the mean score from the observed score and dividing the amount by the standard deviation for that distribution of scores. The standard scores are then added to create a total standard score. This overall score ranks states from highest/best (1) to lowest/worst (50) (The Annie Casey Foundation 2003, 207).

Engel, Field, and Finkelhor (2000) highlight some limitations in the calculation of the overall ranking. They explain that the method does not take into account the racial composition of children in each state. When racial composition of children is considered as a variable, the

overall ranking result varies. Engel, Field, and Finkelhor (2000) show that different weights given to different factors in any index calculation can result in different outcomes and rankings. The type of indicators affects the final result, as does the method used. Ranking systems are arbitrary, and different ranking methodologies lead to different results. Despite its imperfections, Kids Count is a well-recognized measure of child welfare across the United States.

e. The Child Well-Being Index (CWBI)

The Child Well-being Index is another aggregate measure of child welfare. This index was developed by Duke University Professor Land (2003). The purpose of the index is to measure trends over time in the life conditions of children and youth in the United States. The index intends to give a sense of the overall direction of changes in child social indicators since 1990 in the United States.

The CWBI clusters 28 social indicators into seven domains: (i) material well-being, (ii) health, (iii) safety/behavioral concerns, (iv) productive activity (which measures educational attainments), (v) place in community (which measures participation in schooling or work institution), (vi) social relationships, and (vii) emotional well-being. Each component is equally weighted and combined into a summary index of child and youth well-being in the United States. The CWBI demonstrates that the overall well-being of children and youth in the United States has improved substantially since 1994. Improvements continued in 2001, but at a much slower pace¹⁴.

This finalizes our review of national attempts to develop indices. At the international level, we distinguish four important efforts: the National Performance Gap, the International Child Welfare Index, and the Child Quality of Life Index.

f. The National Performance Gaps (NPG)

In 1996, UNICEF published the *Progress of the Nations* report (UNICEF 1996). This report introduced the concept of the National Performance GAP. The NPG measures the extent to which countries have advanced toward child rights in relation to available resources. The

NPG compares a country's performance on three basic indicators: percentage of children adequately nourished, percentage of children being educated to at least grade 5, and percentage of children surviving to age 5.

To calculate the NPG, data for a number of countries—including high-income countries—are plotted on a graph on which one axis is always GNP per capita. Using a least-squares regression method¹⁶ a fitted line is calculated. The fitted line establishes the possible level of fulfillment for each indicator at any given level of income per capita. The NPG (or average achievement) is obtained by calculating the difference between the expected level (fitted line) and the actual country's performance.

g. The International Index Child Welfare Index (IICW)

UNICEF's NPGs do not present an aggregate index of performance. Based on UNICEF's work, Dalirazar (2002) attempts to adapt the NPG to develop an International Index Child Welfare. Using data for approximately 120 low-and middle-income countries, he proposes an aggregate measure that derives from the simple average of the relative NPG for an expanded set of child indicators that includes two additional indicators: infant mortality rate and primary school enrollment rate.

The IICW is calculated by obtaining the simple average of the relative NPGs for the five indicators. The relative NPGs are calculated by dividing the absolute NPG by the expected values. Results from the IICW demonstrate that countries in Europe and Central Asia have attained relative progress in child welfare. In the Middle East, in contrast, the variation inter-country is wide and the index ranges from 17 above the expected level, in Syria, to 28 below the expected level, in Turkey.

f. The Child Quality of Life Index (CQLI)

Another example of an aggregate measure of child well-being is the Child Quality of Life Index. This index was adapted from Dasgupta and Weale's Quality of Life Index (1992)¹⁵. To assess countries' ability to maximize specific child development goals while minimizing resource utilization, Kotamraju, Haag, & Raab (2000) used a linear

programming approach (DEA – Data Envelopment Analysis) to measure and rank the relative efficiency of countries in delivering child quality of life.

The index ranks 38 less developed countries as it redefines the relationship between six (under-5 mortality rate, youth literacy rate, chronic malnutrition, per capita income, female literacy, female average age at first marriage, and population per doctor) indicators into an input-output paradigm. Under-five survival rate, lack of severe malnutrition, and youth literacy rate constitute the three outputs or goals that describe actual and potential child quality of life. Per capita real domestic product, female literacy, female average age at first marriage, and population per doctor are identified as the four inputs or conditions that determine actual or potential CQL. The authors consider that this *transformation paradigm* leads to conclusions very different from those generated by standard ranking methodologies because linear programming coefficients are deliberately chosen to maximize the individual's country ranking (Raab et al. 2000).

The authors found that Sub-Saharan Africa countries, despite their smaller levels of outputs, are more "efficient" in fostering child quality of life than countries with comparable outputs and larger resources (inputs). The authors conclude that fixed weighted indexes which measure only outputs only provide half the picture since approaches like theirs focus on the effectiveness of the inputs. Unfortunately, calculations such as these one are more complex and require additional data (input data), making the index less accessible.

g. The Children's Index (CH)

The Children's Index was developed by the Project on Human Development, Pardee Center for the Study of the Longer Range Future, at Boston University. The CI assesses children's well-being based on four indicators: infant mortality rate, gross primary enrolment rate, percent of population with access to safe water, and percent of children under age 5 suffering from moderate or severe nutritional wasting. Standard scores for the four indicators were averaged to create an index of well-being. A higher value indicates poorer conditions for the children. This index was calculated as a sub-index of the mother's index

that was used to document the conditions of mothers in 105 countries in 22 industrialized nations and 83 developing countries (see <http://humandevlopment.bu.edu>).

Table 2.6 lists the child welfare indices. It illustrates the purpose of each index, the dimensions and indicators, and how the aggregated numbers are calculated. Most indices use similar indicators to describe the different dimensions. Some indicators, such as child mortality, are present in almost all comprehensive indices. Others are only present in one particular index. The ultimate selection of the indicators depends on the purpose of the index or what it is meant to measure - which specific dimensions of the child's well-being. Regarding the method used to calculate an index, most indices use simple or weighted averages of social indicators, whereas others use more complex calculations.

Table 0.6 Summary of Child Well-Being Indices

Index	Purpose	Dimensions / Indicators	Calculations
The Vulnerability Index (Willms 2002)	To identify children's chances of leading a healthy and productive life	Cognitive: Scores on standardized motor and social development test; Peabody Picture Vocabulary Test (PPVT); Math score Behavior: Temperament; any six identified behavior problems	Summary measure of the prevalence of vulnerable children. Vulnerable children as defined by cutoff scores on tests. Two sub-indices: (1) cognitive index: low scores on standardized test of motor and social development at ages 0 to 3, low PPVT R at ages 4-5, or low math scores at ages 6-11; (2) behavior index: difficult temperament at ages 0-1, or any one of six identified behavior problems at ages 2-11. Children coded as vulnerable if they were identified as being vulnerable in either domain.
The Early Development Instrument (EDI) (Janus and Offord 2003)	To assess how ready kindergarten children are for school	Physical health and well-being Social competence Emotional maturity Language and cognitive development Communication skills General knowledge	Questionnaires are completed by teachers for each individual child, but are interpreted at the group level. Vulnerable children are those who score the lowest 10 percent in any one of the scales. The 120 core questions are grouped into five scales.
The Index of Social Health (ISH) (Brink and Zeesman 1997)	To examine progress or setbacks on social health over time	Children: infant mortality rate, child abuse, and child poverty Youth: Teen suicide, drug abuse, and high school dropout Adults Elderly All ages	Indicators are grouped by demographic structure instead of dimensions. To standardize indicators, each is measured in comparison with its own best and worst performance over the time period. Best performance is scored as 10, worst as 1. The scores derived for the indicators are averaged and expressed as a percentage to derive the aggregate index.
The Kids Count Report (The Annie Casey Foundation 2003)	To develop a national state-by-state profile of child well-being	Infant mortality rate Low birth weight Child death rate Teen death rate by accident or homicide Teen birthrate Percent of high school dropouts Percent of teens out-of-school and not working Percent of children living in households where no parents have full-time jobs Percent of children living in poverty Percent of families with children and headed by a single parent	Overall ranking is determined by the sum of a states' standing on each of 10 measures of the condition of children arranged in sequential order, from highest/best (1) to lowest/worst (50). The 200 numerical values for each of the 10 indicators were converted into standard scores. Those scores were summed to create a total standard score for each of the 50 states. Standard scores are calculated by subtracting the mean score from the observed score and dividing the amount by the standard deviation for that distribution of scores. Percent change was computed by comparing the 2000 data for each of the 10 indicators with data for the base year 1990.

Table 0.7 Summary of Child Well-Being Indices (cont'd)

Index	Purpose	Dimensions / Indicators	Calculations
The Child Well-Being Index (CWBI) (Land 2003)	To assess the overall direction of change in the well-being of children in the United States	Material well-being Health Safety and behavioral concerns Productive activity Place in community Social relationships Emotional and spiritual well-being	Equally weighted method. Each one of the 28 social indicators within the seven domains is equally weighted. The seven domains are then combined into equally weighted summary indices of child and youth well-being. Annual observations are computed as percentages of the base year values.
The National Performance Gap (NPG) (UNICEF 1996)	To measure the extent to which positive child rights are honored by countries in relation to available resources	Percent of children adequately nourished Percent of children being educated to at least grade 5 Percent of children surviving to age 5	An expected level of performance is derived for each of three indicators. It requires the fitting of a line to country data represented by points on a graph of which one axis is always GNP per capita. The fitted line represents the average achievement and it is calculated using a least-squares regression method. The difference between the expected level and the actual level is the country's NPG. There is no aggregate summary measure
The International Index of Child Welfare (ICWI) (Dalirazar 2002)	To construct a holistic child welfare index based on the concept of the NPG as an indicator of child welfare	Infant mortality rate Under-5 mortality rate Under-5 malnourishment Net enrollment rate in primary school Percent of children reaching grade 5	This index is the simple average of the relative NPGs for the five child welfare indicators, where the signs for several indicators are reversed, so that higher values uniformly denote greater child welfare. NPGs are the derivation of the expected values for each variable via regressions using double-log specifications. Absolute NPGs are calculated by subtracting the expected values from the actual values. Absolute NPGs are divided by the expected value to obtain relative NPGs.
The Child Quality of Life Index (CQLI) (Raab et al. 2000)	To assess countries' abilities to maximize specific child development goals while minimizing resource utilization	Under-5 mortality rate Youth literacy rate Chronic malnutrition Per capita income Female literacy Female age at first marriage Population per doctor	Uses a linear programming approach (DEA) [**?] to measure and rank the relative efficiency of countries. The DEA ranks are developed by evaluating the extent to which each country minimizes input components and maximizes outputs. Redefines the relationship between U5MR, youth literacy rates, and chronic malnutrition into an input-output paradigm. Outputs: under-5 survival rate, lack of severe malnutrition, youth literacy rate. Inputs: per capita real domestic product, female literacy, female average age at first marriage, and population per doctor.
The Children's Index (CI) (Project on Human Development, Boston University, 2003)	To assess children's well-being	Infant mortality rate Gross primary enrollment rate Percent of population with access to safe water Percent of children under age 5 suffering from moderate-to-severe nutritional wasting	Standard scores (Z-scores) are created for each of four indicators. The standard scores for each indicator are averaged to create the index.

Among the aggregated indices that measure children's well-being across countries are the IICW, CQLI, and CI. The original calculations include some Mediterranean countries. Table 2.7 shows how some of these countries perform as ranked by these indices.

Table 0.8 Mediterranean Countries Ranked by Other Indices of Child Well-being

Country	IICW	CQLI		CI
		DEA Rank	Borda Rank	
UAE				62
Kuwait				52
Croatia	41			
Tunisia	-4	11	14	35
Algeria	-4	2	15	40
Iran	-14	21	26	44
Turkey	-28			35
Romania	22			52
Lebanon				29
Jordan	3	15	7	24
Albania	31			
Morocco	-18	18	23	59
Egypt	3	24	24	33
Syria	17			46
Yemen				95
Iraq				71

Notes: The International Index of Child Welfare(IICW) measures 118 countries; higher values denote greater child welfare. The Child Quality of Life Index (CQLI) measures 38 countries; using two ranking systems: the Borda rule which ranks countries' absolute child quality of life; and the DEA that ranks the relative efficiency of countries in delivering a child's quality of life, from most efficient to less efficient in use of resources. The Children's Index (CI) measures 105 countries; a higher value indicates poorer conditions for children.

To summarize:

First, there are a range of aggregate indices that measure child well-being. Most of the indices concentrate on specific countries. There are few indices or studies that assess children's well-being across

developing countries. Despite some sectoral reports¹⁷ on children's condition, we are not aware of any indices of child well-being that apply comprehensively to the Mediterranean region.

Second, some of the indices focus on a specific dimension of well-being (for instance, school readiness) or on a specific development stage (such as early childhood). Other indices are more comprehensive and intend to cover many dimensions of well-being or the different stages of child development. Third, the purpose of an index designed to measure child well-being at the international level can differ. Some indices, such as the CQLI measure the ability of countries to maximize specific child development goals while minimizing specific resource availability, whereas other indices such as the IICW measure progress in child welfare.

Fourth, some child well-being indices constitute adaptations from indices that measure the overall well-being of the population. For instance, the CQLI is based on the Quality of Life Index. Surprisingly, no one has yet attempted to adapt the HDI to develop an index of child well-being. In the next section, we will present some of our attempts to develop a Child Welfare Index.

Notes

(1) Micklewright and Stewart have conducted extensive studies of child well-being for the UNICEF Innocenti Research Center on Child Development. Their research has focused primarily on industrialized countries.

(2) Unlike poverty, social exclusion refers not just to the lack of economic resources, but also to the subjective effects of limited access to services and deprivations in housing, food, shelter, and sanitation. The United Nations Convention on the Rights of the Child (1989) distinguishes four major dimensions of well-being: survival, protection, development, and participation (inclusion and exclusion). The Convention on the Rights of the Child is available at <http://www.unicef.org/crc/crc.htm>

(3) The authors participated in a series of international workshops on monitoring and measuring children's well-being, held in Israel, Italy, and the United States in 1994-1997. The conference on Monitoring and Measuring Children's Well-being was held in Bethesda, Maryland, in 1994. Two other workshops were held in Jerusalem in 1996 and in Italy in 1997.

(4) Human Resources Development Canada and Health Canada (2002). The Well-Being of Canada's Young Children. Government of Canada Report. [www.socialunion.gc.ca]

(5) The Future of Children
http://www.futureofchildren.org/discussion2873/discussion_show.htm?doc_id=105773

(6) In Ben-Arieh et al. (2001) see Annex 1 for Ben-Arieh (1995) The State of Children in Israel 1992-1995; and Bothayna (1988) The State of Egyptian Children.

(7) In the Mediterranean countries, the governmental responsibility for children resides, in Greece, with the Ministry of Health and Welfare; in Italy, with the Ministry of Social Affairs; and, in Spain, at regional and state levels. Greece and France have no official reports on children.

(8) The Interagency Forum on Child and Family Statistics is the first truly coordinated agency effort to produce data about children. To this date, the forum has published yearly portraits of the well-being of America's children.

(9) Since its first edition, several indicators have been rewritten or removed. Information from each indicator is presented in graphs, which highlight key trends and important population subgroups differences, and tables which provide more detailed information. Moreover, data presented for each indicator are compared with data from the previous year, and any statistically significant changes (increase or decrease) are noted per indicator.

(10) Information on this initiative can be accessed at <http://www.hrdc-drhc.gc.ca/dept/millennium/early.shtml>.

(11) For the United States, for example, refer to Hauser, Brown, and Prosser (1997).

(12) National reports have been produced for, Algeria, Albania, Bosnia, Lebanon, Serbia, Syria, Iraq, and Tunisia. These reports are available at <http://www.unicef.org/reseval/micsr.html>.

(13) Janus and Offord. Development of a community-level measure of school readiness to learn for 4-5 year-old children. Canadian Centre for Studies of Children at Risk, McMaster University, Hamilton, Ontario (January 2003). This report may be accessed at <http://www.fhs.mcmaster.ca/cscr/Project%20descr.Jan2003.htm>.

(14) Land (2003) The Child Well-Being Index. See http://soc.duke.edu/resources/child_wellbeing/

(15) An expected value is calculated using ordinary least-squares regressions analysis and double-log specifications. The expected values are converted from natural logarithms to numerical values.

(16) The Quality of Life Index ranks countries on six indicators, or constituents using the Borda Rule method. For calculations and information on the Quality of Life Index refer to Dasgupta and Weale (1992). On Measuring the Quality of Life. World Development, vol. 20, no. 1, pp. 119-131, 1992.

(17) For example, The State of Child Health in the Eastern Mediterranean Region (WHO 1995) or World Bank sectoral studies of education or health in the Middle East and North Africa and Eastern and Central Asia.

3 PROPOSED ALTERNATIVE INDICES TO MEASURE CHILD WELFARE IN THE MEDITERRANEAN REGION

In this section we propose four alternative indices for measuring children's welfare in the Mediterranean region. The first three indices, the Child Welfare Index (CWI), the Child Poverty Index (CPI), and the Child Gender-Related Development Index, consist of adaptations of the HDI and its extension indices: the Human Poverty Index (HPI-1) and the Gender-Related Development Index (GDI). The fourth index, the Child Development Welfare Index (CDWI), is the result of a thorough literature review on current aggregate measures of child well-being. But, before we describe how these indices are calculated, we need to make some clarifications.

First, the proposed alternative indices measure countries' performance in promoting children's well-being. Second, we define children as boys and girls ages 0–14¹. According to the life-cycle approach, there are four important stages in childhood: birth, infancy, childhood, and school age. The first three indices proposed here cover these four periods indistinctively. However, the fourth index is an age-specific child welfare index in which measures achievement in child welfare at the preschool-age and school-age is assessed separately and then combined into one index.

Third, the selection of indicators used to calculate the indices reflects the criteria of any desirable social indicator. In other words, indicators are selected based on their capacity to discriminate, their availability and consistency over time, and their ability to be understood easily by the general public. Because countries in the Mediterranean region constitute a diverse group—some have attained high levels of overall well-being across their populations, whereas others are among the poorest countries in the world—the indicators selected should be able not only to assess large differences among countries, but also to discriminate among countries performing at similar levels.

Fourth, the data for the construction of the indices comes mainly from the World Bank internal databank (2003), UNESCO (2003), and UNICEF (2003). These datasets contain important data on child welfare. Unfortunately, and despite the ample size of the databases, data

for all indicators are not available for all countries in the Mediterranean region, particularly for Serbia, Iraq, Occupied Palestine (or West Bank and Gaza) and Libya. In all cases we use the most recent data available; however, in cases these data refer as back as 1996.

Fifth, as adaptations of the HDI, the proposed four child welfare indices are constructed using the three basic dimensions of human development as used by UNDP in the HDI: A long and healthy life –in this case childhood-, Knowledge, and A decent standard of living. The specific indicators we use, as expected, are different from the ones used in the HDI, and constitute direct measures of children welfare like child mortality rate.

Sixth, each of the three dimensions is represented by one or more than one indicator. For example, the indicators selected for the CWI are survival rate by age 5, enrolment rate in education, and GDP per capita. The CPI assesses child poverty by combining data on U5MR, out-of-school children, and extent of population without access to water and percent of children undernourished. The CGI assesses boys and girls' welfare using the same indicators as for the CWI, with the only difference that we used breakdowns by gender for both under-five mortality rate and net secondary enrolments. Table 3.1 gives examples of the indicators used in the HDI and the CWI and alternative indices.

Table 3.1. The three Dimensions of Human Development and Indicators used to Construct the Propose Child Indices

Index	A Long and Healthy Life	Knowledge	Decent Standard of Living
HDI	Life expectancy at birth	Adult illiteracy rate Gross enrolment rate	GDP per capita (PPP US\$)
CWI	Under-five mortality rate	Gross primary and secondary enrolment rate	GDP per capita (PPP US\$)
CGI	Under-five mortality rate, girls and boys	Gross primary and secondary enrolment rate, girls and boys	GDP per capita (PPP US\$)
CPI	Under-five mortality rate	Out-of-school children	Population without access to water Percent underweight children Child Poverty
CDWI	Under-five mortality rate Mortality rate 5-14	Gross enrolment rate in early child development programs Net secondary enrolment rates Primary completion rate	GDP per capita (PPP US\$)

Gross enrolment rate² GDP per capita (PPP US\$)³ Under-five mortality rate⁴ Net secondary enrolment rates⁵

Notes: CWI, Child Welfare Index; CGI, Child Gender-Related Index; CPI, Child Poverty Index; CDWI, Child Development Welfare Index; GDP, Gross Domestic Product

As we have explained above, each dimension (e.g. decent standard of living) comprises one or more indicators (e.g. GDP per capita or population without access to water and percent of underweight children). In order to calculate the index, these indicators are first transformed into a dimension index. To construct the dimension index, a maximum and a minimum value are chosen for each underlying indicator). In the case of the HDI and derivate indices, these maximum and minimum values or *goalposts* have been predetermined by the HDR (see HDR, 2003; 341). *Table 3.2* shows these *goalposts*.

Table 3.2. Goalposts for calculating the HDI for the Mediterranean region

Indicator	Maximum value	Minimum value
Life Expectancy at birth	85	25
Combined Gross Enrolment ratio	100	0
GDP per capita (PPP US\$)	40,000	100

Source: UNDP (2003)

Once we identify a maximum and minimum value, we proceed to calculate the dimension index using the formula given in the HDR (2003; 341):

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{Maximum value} - \text{minimum value}}$$

Like in the HDI, performance in each dimension is expressed as a value between 0 and 1. For those indicators for which countries have values higher than a hundred (for e.g. gross enrolment rates which refers to the total number of children enrolled in school regardless of their age, some countries report having enrolment rates higher than a hundred percent) we applied a value of 100 percent (see HDR, 2003; 240).

Unless otherwise specified, we have used the goalposts assigned by the Human Development Report (2003) in our calculations of the other three proposed indices. Eventually, for those indicators which do not have a predetermined *goalpost* because they have not been used by the HDR (for e.g. under five mortality rate,), we have define the goalposts.

In those particular cases we assign a minimum value of 0 and a maximum value which is given by the highest score in that particular underlying indicator. For example, in the case of under-five mortality

the minimum value is 0 (the goal is for countries to have no child malnutrition) and the maximum value for the year 2003 is 133 (that is the highest value scored by one country in the region for under-five mortality rate). This general formula to calculate the dimension index is used for all our child indices (with the exception of child deprivation index).

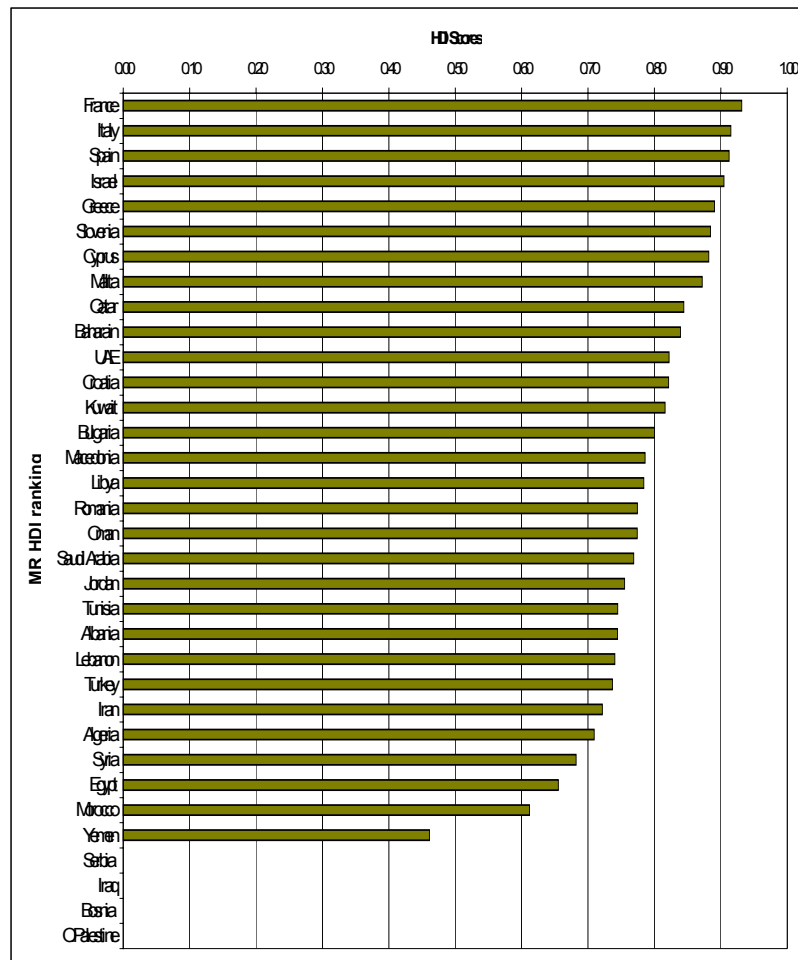
Next, the dimension indices are combined (un-weighted average) into a final index. The general formula to calculate the HDI is: $HDI = 1/3(\text{Life expectancy index}) + 1/3(\text{education index}) + 1/3(\text{GDP index})$ (UNDP, 2003; 341). There are slight variations in the way the GDI and HPI-1 are calculated compared to the HDI, however, in theory all follow the same formula. We have followed the different calculation procedures for our alternative child indices, as in the Human Development report.

3.1. THE CHILD WELFARE INDEX

The first index we propose is the Child Welfare Index (CWI). This index is an adaptation of the Human Development Index. The CWI measures the average achievement in a country in three basic dimensions of child development: a long and healthy childhood, knowledge, and a decent standard of living. The ultimate objective of this index is to compare country's average achievement in child welfare vis a vis the country's average achievement in overall human development (HDI). Consecutively, recalculate the HDI for the Mediterranean countries⁶.

The first step is to calculate the dimension indices for each indicator and next, using the general formula given in the Human Development Report (HDR, 2003)⁷, calculate the HDI-MR (that is exclusively for the Mediterranean countries). Then, we rank countries based on their performance on the HDI (MR). *Figure 3.1.* shows countries score ranked from better to worse. This ranking (order) is used as a baseline to compare countries performance on the alternative indices we propose.

Figure 3.1. HDI for the Mediterranean Countries



Note: When we compare the results of our HDI ranking to the ranking presented in the most recent UNDP Human Development Report (2003) slight differences were apparent. These variations reflect the different data used to develop the rankings-the data used for the HDI are more current than those used for the Human Development Report (2003). No sufficient data was available to calculate the HDI MR for four countries – Serbia, Iraq, Bosnia and Occupied Palestine.

Figure 3.1 illustrates the wide variation in development achieved by countries in the region. France attained an HDI value above 0.900, whereas Yemen did not reach 0.5. This difference is not surprising because Yemen is the poorest country in the Mediterranean region (and one of the poorest of the world), whereas France is one of the richest

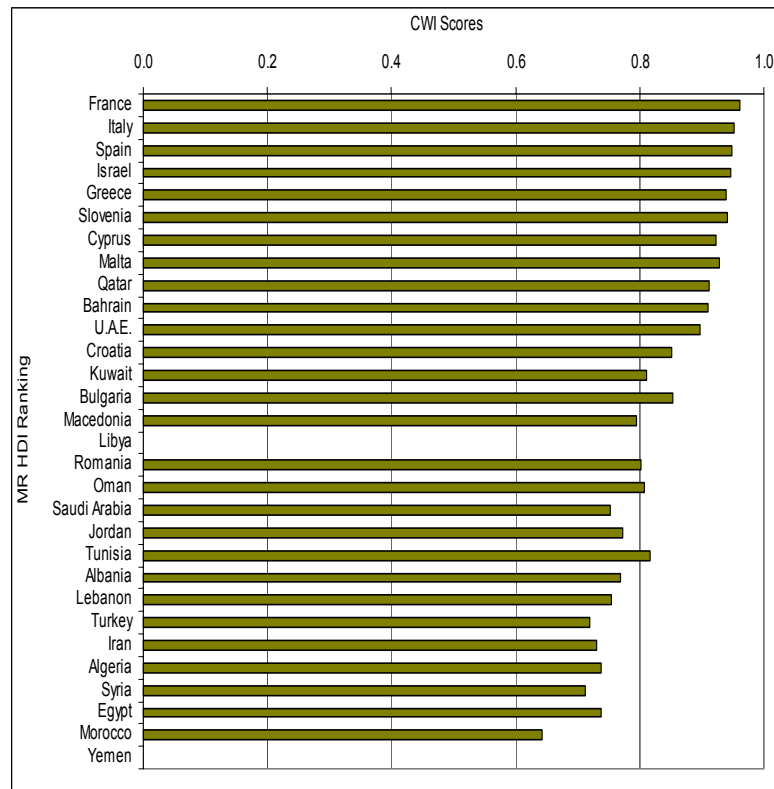
countries in the region and world. Overall, we see little homogeneity in the level of human development attained across the Mediterranean countries.; where most European countries cluster at top, and Middle East and North Africa countries at the bottom, which Eastern European countries dispersed in between.

Next we calculate the CWI. To calculate the CWI, we convert our selected indicators into dimension indices⁸. Since under-five mortality rate as an indicator does not measure a country's achievement in promoting a healthy childhood, we first calculate the dimension index (following the general rule) and then subtract 1 minus the under-mortality dimension index to obtain its complement – the probability of surviving by age five. By doing so, we are able to use under-five mortality as an indicator that measures a long and healthy childhood.

We calculate the final CWI index using the general HDI formula, but with a slight variation, which is as follows. Unlike the HDI, where two indicators, - and therefore two dimension indices adult literacy index and gross enrolment index-, are combined to construct the education index, for the CWI we only used one indicator -combined enrolment rates in primary and secondary education- to calculate this dimension.

We did not use literacy levels because these measure literacy rates for adults and adolescents (15 –24) and not children's. In future attempts, researchers should consider incorporating outcome indicators of educational achievement, such as children's functional literacy skills. Functional literacy skills can be assessed through international educational achievement examinations like the PISA – Programme for International Student Assessment- and PIRLS- IEA's Study of Reading Literacy Achievement in Primary Schools. Already some Mediterranean non-EU and non OEACD countries have joined these efforts, however, many countries in the still have not yet been incorporated. *Figure 3.2* shows the final CWI scores for the Mediterranean countries.

Figure 3.2 The CWI Ranking of Mediterranean Countries

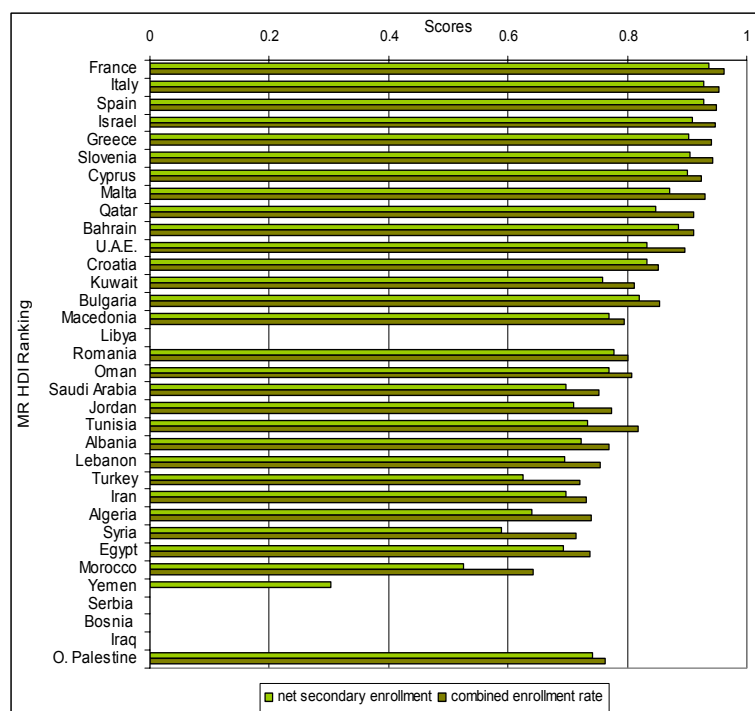


Note: For Libya, Serbia, Iraq, and Bosnia, the data were insufficient for calculation.

Compared with the HDI, the ranking of countries in the CWI is modified, with some countries performing worse and some better. Among the countries that perform worse on the CWI, compared with the HDI, are Greece, Croatia, Qatar, Kuwait, Saudi Arabia, Jordan, Turkey, and Syria. Among the countries that perform better are Slovenia, UAE, Tunisia, Algeria, Bahrain, Egypt, Bulgaria, and Oman. The best performers on both the HDI and CWI are France, Italy, and Spain. Among the worst performers are Morocco, and Syria. The data are insufficient data for calculating the CWI for Libya, Serbia, Iraq, Yemen, and Bosnia.

For purposes of comparisons, we replaced combined enrolment rates in primary and secondary with net enrolment rates in secondary education, and recalculated the CWI. Most countries in the Mediterranean region are consider middle income countries. As middle-income countries, most have attained or are almost close to attain universal primary education. In that respect, the use of enrolment rates at the primary level resulted not as valuable as secondary enrolment rates because it showed little variation among the countries. *Figure 3.3.* shows the differences in ranking on the CWI when we use net secondary and combined enrolment rates.

Figure 3.3. The CWI ranking for Mediterranean Countries, with Net Secondary Enrollment Rate Versus Gross Combined Primary and Secondary Enrollment Rate

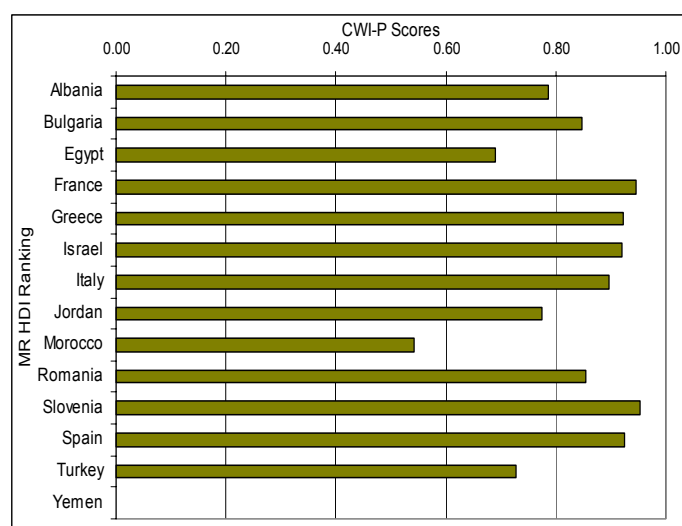


Note, For Serbia, Bosnia, Iraq and Libya data were insufficient for calculations. Data for Occupied Palestine refer to West Bank and Gaza.

Figure 3.3 shows some variation in the position of countries, particularly those countries, who scores are not in the extremes of the distribution. The actual scores are higher for CWI when we used combined enrolment rates. This is expected because timely enrolment and continuation to secondary school is not as common as we wish – yet- for many low-middle income and low income countries

To further illustrate the information that can be gained when child poverty data – and more directly related children’s economic welfare indicators - are collected regularly, we replaced GDP per capita (the indicator selected for a decent standard of living, which is as proxy for average incomes of families with children) by percentage of children who do not live in poverty – that is children who are above fifty percent of the median of the average income of the population-. *Figure 3.3* shows the results on the CWI when child poverty is used as the indicator.

Figure 3.4 CWI With Child Poverty as an Indicator – Selected Countries



Note: For countries not shown, there were no data on child poverty.
Source of data: UNICEF (2000); Gordon et al. (2000).

Figure 3.4 shows that the use of child poverty data, instead of GDP per capita, results in slight modifications in the overall ranking of countries. For instance, Slovenia performs better in the ranking using child poverty rates, compared with GDP per capita, than do Italy, Spain, Greece, and Israel. This result indicates that the use of GDP per capita as an indicator for decent standard of living may hide important issues specifically related to a child's economic well-being. GDP per capita is a broader measure of economic development and may not reflect the "full" picture for children. As Atkinson (1998) emphasizes we need to develop indicators of economic performance which are sensitive to the needs of children and families (Atkinson, 1998);.

These results, however, are timid, and have to be use with caution since definitions of poverty used to calculate the CWI vary. For instance, child poverty data used for Yemen, Morocco, and Egypt come from Gordon and colleagues (2002) who measure child deprivation in eight areas: food, water, sanitation facilities, health, shelter, education, information, and basic services. A child is defined to be living in absolute poverty only if she/he suffers from two or more severe deprivations of basic human needs (Gordon, 2002 ; 9) This is different to the definition most commonly used of child poverty as the percentage of the population fifty or 40 percent below the average income (relative poverty) or below the equivalent of the U.S. poverty line, which were used by UNICEF (2000) in the elaboration of the report card.

Overall, the relevance of the CWI is twofold. First, the CWI allows for comparisons across countries of their achievements toward better welfare conditions for children. But most of all, the CWI allows for comparisons of HDI and CWI results within countries. Thus, the advantage of the CWI is not only to rank countries by their achievements, but also to compare a country's ranking in the HDI with its ranking by GDP per capita.

As with other aggregated indices, the CWI has limitations. The quality of its measures could be improved by incorporating breakdowns by age (see the CGI for an attempt), ethnicity, and regions Unfortunately, these data are not collected regularly and thus, difficult to incorporate in an indicator which is design for monitoring on children's welfare at the national level and on annual basis.

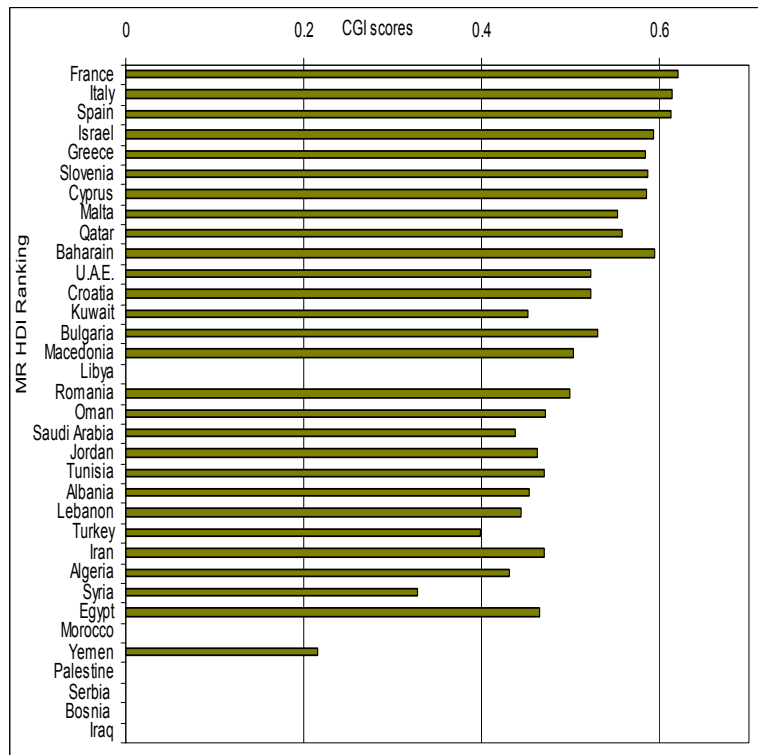
3.2. THE CHILD GENDER-RELATED DEVELOPMENT INDEX (CGI)

The CGI is calculated similarly to the GDI⁹ in which the average achievement is adjusted to reflect the inequalities between boys and girls in the three dimensions. The calculation of the CGI, as of the GDI, involves three steps. First, the indices for boys and girls in each dimension are calculated according to the general formula. Second, the dimension indices for boys and girls are “combined in a way that *penalizes* the differences in achievement between boys and girls, resulting in an equally distributed index¹⁰. Third, these equally distributed dimension indices are combined into a single index by means of a simple average.

Note that in the case of the CGI, the share of girls and boys population is calculated according to the age group covered by the underlying indicator. For example, for under-five mortality rate, we calculated the population share of girls ages 0 to 5; for combined enrolment rates we calculate the share of the population share of school age boys and girls.

Unlike the GDI, rather than estimated earned income by gender (as an indicator of decent standard of living) the CGI includes GDP per capita. The CGI is calculated by simply averaging the various equally distributed indices into one final index. *Figure 3.5* shows the CGI ranking of the Mediterranean countries.

Figure 3.5 The CGI Ranking of Mediterranean Countries



Note: For Libya, Serbia, Iraq, Bosnia, Morocco, and O. Palestine the data were insufficient for calculation.

Figure 3.5 show some reversals in performance using the CGI. Among the countries that perform worse on the CGI, compared with the GDI, are Israel, Kuwait, Saudi Arabia, Oman, UAE, France, and Cyprus. Among the countries that perform better are Italy, Greece, Slovenia, Croatia, Bulgaria, Romania, and Egypt. As expected Middle East and North African countries do comparatively worse on the CGI than on the HDI and CWI. On the other hand, overall, Eastern Europe countries achieved better scores on the CGI.

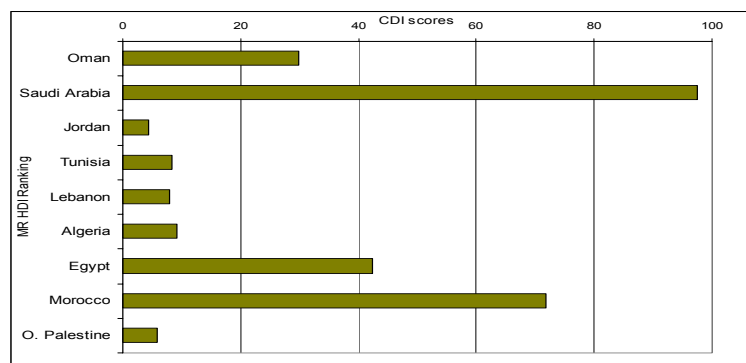
3.3 THE CHILD DEPRIVATION INDEX (CDI)

Like the HPI-1, the CDI measures deprivations in the three basic dimensions of child development; that is vulnerability to death at an early age, exclusion from participation in the education system, and lack of access to a decent standard of living (for a detailed list of indicators used please refer to table 3.1).

In contrast to the HDI and the CGI, the HPI-1 is not calculated following the general formula. Because the indicators used are already expressed as a percentage, there is no need to create the dimension indices. The percentage indicators are raised to the power of three, in order to give more weight to the dimension in which there is the most deprivation. The CDI is calculated like the HPI-1

In the CDI we replace adult illiteracy by the percent of children out of school and probability of birth of not surviving to 40 by probability of not surviving by age five. To calculate the dimension of standard of living, we used the same indicators used by the HPI-1: percentage of the population without access to water and percentage of the of children underweight for age. Like in the HPI-1, not all countries are ranked according to this category. *Figure 3.6* shows CDI scores for a few Mediterranean countries.

Figure 3.6 The CDI Ranking for Mediterranean countries

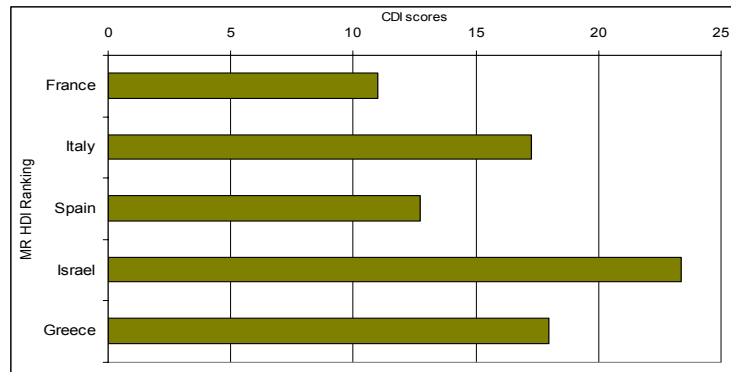


Note: For countries not shown, data was insufficient. Data for O. Palestine refers to West Bank Gaza. O. Palestine is not ranked on HDI.

Figure 3.6 shows that Saudi Arabia and Oman do worse compared to the ranking on the HDI. Saudi Arabia's score on the CDI is extremely high, follow by Morocco. Jordan, Tunisia and Lebanon perform better than on the HDI. Unfortunately, there is still not sufficient data on out-of-school children¹¹. Currently UNESCO, UNICEF and World Bank are working on a common definition of out of school children and calculation methodology. It is expected that in the coming years, these data will published regularly.

For given number of countries, we replaced percentage of under five malnourished and percentage of the population without access to water by child poverty rates. These list of countries covers those clustered under the HPI-2. Figure 3.7. shows the CDI results using child poverty as an indicator.

Figure 3.7 CDI Ranking using Child Poverty as an Indicator- Some Countries



Note: The higher the score, the poorer a country performs in the CDI.

Figure 3.7. shows variations compared to the HDI. For instance, Italy and Israel perform worse on the CDI compared to the HDI, while Greece and Spain perform better

In the future, as in the HPI-2, social exclusion is a fourth dimension that should be incorporated into the CDI. Social exclusion, like in the HPI-2, can be measured through an indicator similar to unemployment but that

captures percent of households with children –under aged 15- where one or both adults are unemployed. These data give a sense of the children’s immediate environment. We now know a deprived environment (both from economic resources and socio-emotional support) can have detrimental effects on children’s development.

3.4 THE CHILD DEVELOPMENTAL WELFARE INDEX (CDWI)

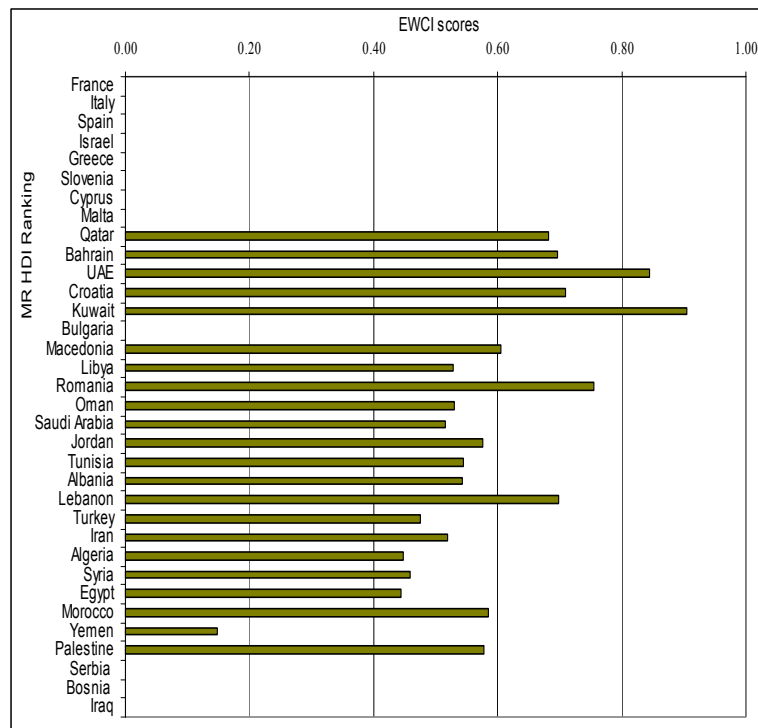
Based on the literature review on aggregate measures of child well-being, we develop the CDWI. Eventually, this index should have two main sub-indices: a preschool-age component and a school-age component. Each sub-index measures child welfare in the three dimensions used in the other indices: a decent standard of living, long and healthy childhood, and knowledge (or social capital).

The early childhood sub-index (ECWI) assess country’s achievement toward early child welfare (for children ages 0-5) through five indicators: the percentage of children with adequate nutrition, survival rate by age five, percentage of children in ECD programs, and GDP per capita. The school-age index (SCWI) refers to older children (ages 6-14) and measures the welfare through three indicators: the percentage of children ages 5 to 14 who survive (-mortality rate ages 5 to 14), completion of primary school, and GDP per capita.

3.4.1 The Early Child Well-Being Index (ECWI)

The ECWI measures countries’ performance toward promoting early child welfare (that is, for children of preschool age). The ECWI is calculated following the general formula of maximum and minimum values for each dimension and then combining the three dimension indices – long and healthy life, knowledge and standard of living, into an un-weighted average. We obtain the Long and healthy dimension by adding up countries performance on survival by age five and the percentage of children with no malnutrition and then dividing it by two. *Figure 3.8* presents the results of the EWCI ranking of Mediterranean countries.

Figure 3.8 The EWCI Ranking of Mediterranean Countries



Note: For countries no final score on EWCI shown, data was in sufficient. Data for O. Palestine refers to West Bank Gaza. O. Palestine, Serbia, Bosnia and Iraq are not ranked on HDI.

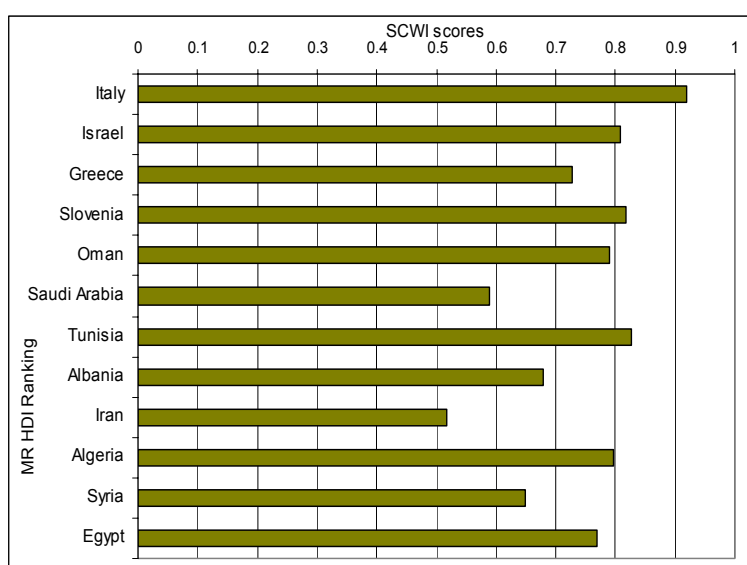
Figure 3.8 shows some slight modifications in the ECWI ranking of countries, compared with the more comprehensive CWI. For instance, the UAE ranks better, whereas countries such as Qatar, Oman, and Saudi Arabia rank worse. Similar results are obtained on both the ECWI and the CWI for Romania, Kuwait, Jordan, Lebanon, Syria, Turkey, and Morocco.

The EWCI, by itself can constitute another alternative index. The value of this index is to use it to compare it against the CWI, and the HDI, as the focus is early childhood vis a vis overall child welfare or overall human development.

3.4.2 The School-Aged Child Welfare Index (SCWI)

The School-aged child welfare index (SCWI) is calculated according to the general formula. Primary completion rates, GDP per capita and mortality rates by age 15 constitute the three indicators that are converted to dimension indices. Like with under-five mortality rates, once mortality rates by age 15 are converted into a dimension index, these are subtracted from 1 to obtain survival by age 15. Table 3.9. shows the index scores for the SCWI for some of the Mediterranean countries.

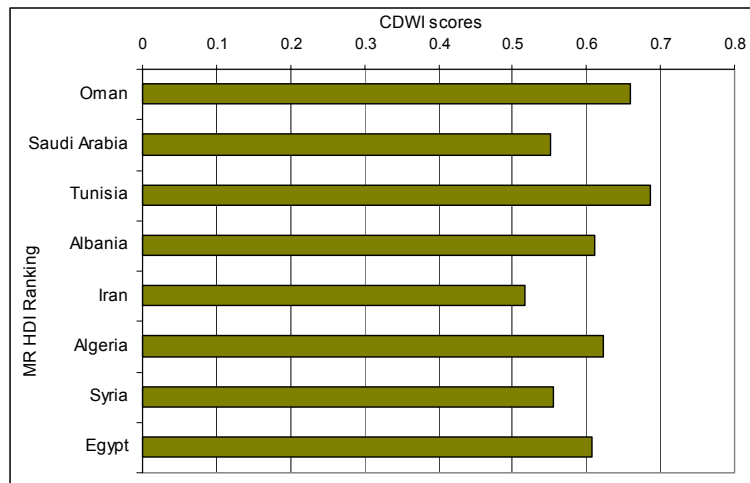
Figure 3.9. The SCWI Ranking for Mediterranean countries



Note: For countries not shown, data was insufficient. Data for O. Palestine refers to West Bank Gaza. O. Palestine, Serbia, Bosnia and Iraq are not ranked on HDI.

Next, these two sub-indices can be combined into one, which is the result of the un-weighted average of the two sub-indices. Figure 3.10 shows the results on the CDWI for some Mediterranean countries. Algeria and Tunisia do comparatively better on the CDWI compared to the HDI whereas Iran and Saudi Arabia do worse on the CDWI than on the HDI.

Figure 3.10 The CDWI Ranking for the Mediterranean countries



Note: Countries not shown, there were no sufficient data.

Throughout this section we have shown some alternative ways of calculating some aggregate indices to measure child welfare across the Mediterranean countries. These indices can give us a general idea of who countries are fairing in comparison to the overall human development in the country.

4 CONCLUSION AND RECOMMENDATIONS

In this report, we have reviewed efforts to combine indicators of various dimensions of well-being (health, education, and income) into one comprehensive welfare index. Any welfare index is a *snapshot* taken at a particular time and from a particular point of view.

As a snapshot, the index does not incorporate any dynamic aspects of a country's well-being. For instance, a country with good growth prospects is, *ceteris paribus*, better off than a country with a stagnant, declining economy, but good growth prospects cannot be captured in a static index. Similarly, and especially when the focus is on children, demographic dynamics can make a huge difference in the (future) well-being of the population.⁽¹⁾ Thus, when using an index to assess the performance of a country, some attention should always be paid to trends in relevant aspects of the economy and the population.

Taken from a particular point of view, this snapshot includes only a limited number of dimensions of well-being. The dimensions that are used most often are income, health, and education, but one could easily argue political freedom, equality, or environmental dimensions are equally important. Not only are a few dimensions included (and many left out), but also choices have to be made on how to combine these dimensions into one single index. These choices determine the value of the index. Other choices could have been made, resulting in an (often slightly) different value. When using an index to rank countries, these shortcomings, which are inherent in any well-being index, should be borne in mind.

With these caveats and based on an extensive review of the literature, we come to the following three recommendations for constructing one or more indices of child well-being for countries in the Mediterranean region.

(1) See *Annex 1* for a detailed analysis of demographics in the Mediterranean countries.

Recommendation 1

Construct a child well-being index (CWI) using UNDP's approach for constructing the HDI.

As indicators for the CWI, one could use:

- For income — GDP per capita
- For health — under-5 mortality
- For education — school enrollment.

As shown in *section 3.1*, the CWI allows for comparison between the general welfare of the population and that of children.

As a first extension of this index, information on the percentage of children living in poverty should be included. Clearly, if the focus is on child well-being, any index that does not include information on child poverty is seriously flawed. A first priority, therefore, is to collect comparable data on child poverty in all Mediterranean countries. Once these data are available, a child deprivation index, or CPI, can be constructed similar to the HPI-1, as follows:

As indicators for the CPI, one could use:

- For income — percentage of children living in poverty
- For health — under-5 mortality
- For education — percentage of children not in school.

As a second extension, special attention can be given to boy/girl differences. This extension could lead to the CGI.

As indicators for the CGI, one could use:

- For income — GDP per capita (in general, there will be no boy/girl differences in income)
- For health — boy/girl differences in under-5 mortality
- For education — boy/girl differences in school enrollment.

In *section 3.2*, we constructed these indices, the CWI, the CPI, and CGI. The CWI showed differences in the countries' performance compared with the HDI. Some countries performed better in the CWI than in the HDI, whereas others fared poorly on the CWI compared with the HDI. In addition, the CPI, as well as the CWI, showed differences in the countries' performance in deprivations that directly affect children in the three basic dimensions of human development and in gender inequalities between boys and girls, compared with overall measures of deprivations and gender inequalities.

For all the indices, other or additional indicators could be chosen. For instance, school enrollment could be augmented by school performance, and under-5 mortality could be replaced by different health and nutrition indicators for children. But, in general, the construction of these aggregate indicators is straightforward and, with the notable exception of information on poverty, most data will be readily available.

Recommendation 2

Adopt one or more (or a combination of) the child well-being indices discussed in section 2.

Alternative indices of child well-being, which are developmentally appropriate, culturally relevant, and child centered, could be developed following some of the examples presented in section 2 or in section 3. These examples present a number of indicators (besides the ones used to develop the indices based on the HDI approach) that could be used to develop these indices. A possible alternative index such as the CDWI could be constructed using sub-indices which assess specific developmental stages. Since the notions of what is understood by child well-being may differ in the Middle East and North Africa countries and Eastern European countries, these sub-indices should incorporate indicators that reflect on the local values.

Recommendation 3

Conduct, in the next few years, in-depth sector-specific studies focused on how well current policies and programs serve the needs of children in Mediterranean countries. Combine this information gradually into a Child Sector Performance Index similar to WHO's Health Sector Performance Index.

The sector studies should, over time, include all “sectors” relevant to a child’s well-being. For the health and education sectors, the analysis should include benefit incidence studies to show whether public and private resources are used to accrue benefits to those most in need. Special attention should also be given to distributional issues, for example, among ethnic groups and between urban and rural areas.

Other “sectors” should not be overlooked. Tax and public expenditure programs focused on children should be reviewed and evaluated for their effectiveness. Parental support programs, urban and rural environmental improvement programs, safety issues, and child protection laws also should be included in this review and evaluation.

WE REALIZE THAT THIS LAST RECOMMENDATION CAN ONLY BE SUCCESSFULLY IMPLEMENTED OVER A NUMBER OF YEARS. BUT, IF IMPROVING THE WELFARE OF ALL CHILDREN IN THE MEDITERRANEAN COUNTRIES IS THE NUMBER ONE PRIORITY, ONE MUST STRIVE TOWARD A COMPREHENSIVE REVIEW OF ALL PROGRAMS AND POLICIES THAT CAN CONTRIBUTE TO CHILDREN'S WELL-BEING. WHETHER THESE REVIEWS WILL ULTIMATELY BE EXPRESSED IN ONE COMPREHENSIVE CHILD SECTOR PERFORMANCE INDEX IS, IN THE FINAL ANALYSIS, OF SECONDARY IMPORTANCE.

Notes

- (1) The cut-off age default for children, as defined by the UN Convention of the Rights of the Child is age 18. The World Bank (2003) defines youth as ages 15–24. In this report, although we define children as ages 0–14, in some cases indicators relate to older children for instance secondary enrolment rates.
- (2) Combined Gross Primary and Secondary Enrolment - the number of pupils enrolled in primary and secondary education, regardless of age, expressed as a percentage of the population in the relevant official age group [UNESCO 2003 (2000/2001 data)]
- (3) U5MR - the probability that a newborn baby will die before reaching age 5. The probability is expressed as a rate per 1,000 live babies born [World Bank 2003(2002 data)]
- (4) GDP Per Capita PPP (US\$) - PPP US\$ refers to the purchasing power parity, which is a rate of exchange that accounts for price differences across countries and allows for international comparisons of real output and incomes [World Bank 2003(1996-2002 data)].
- (5) Net Secondary Enrolment: the number of school-age children enrolled in secondary education, expressed as a percentage of the population in the relevant official age group. [World Development Index 2003 (1996-2000 data)]
- (6) A total of 34 countries are included in this region. See annexes for a complete list
- (7) as in the HDR 2003[UNESCO 2003 Global Education Digest. <http://www.uis.unesco.org>. (2000/2001 data)]
- (8) see example on pg 40
- (9) For a detailed explanation of how the GDI is calculated, see the Human Development Report (UNDP, 2003; 343).
- (10) For a detailed explanation of calculations of the equally distributed index = {(girl population share (girl index -1))} + {(boy population share (boy index-1))} see (UNDP, 2003; 255).
- (11) Can be calculated by subtracting the number of children in the population minus the number of children enrolled.

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ANNEXES

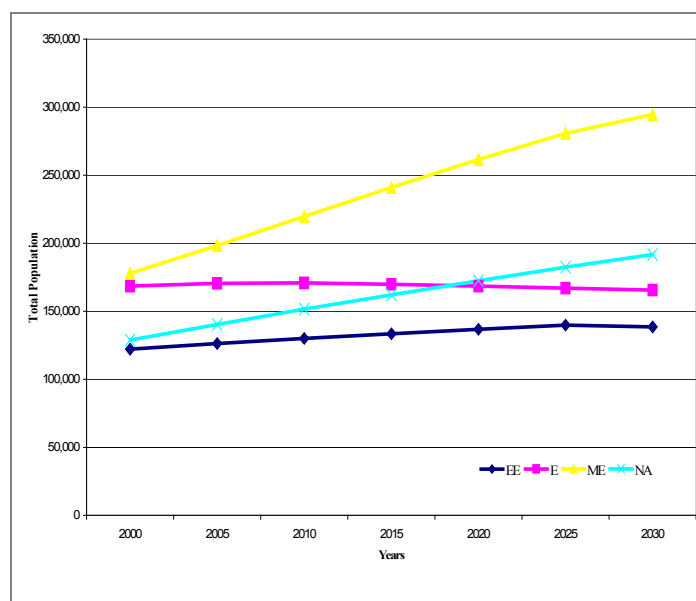
ANNEX 1. DEMOGRAPHICS

Simple demographic data on the total number of children in a country or region provide contextual information for understanding the urgency of child well-being. Demographic changes can rapidly modify the socio-economic environment, which affects children's well-being. Changes in population structure result from demographic processes of fertility, longevity, and migration (Saporiti 1994), which have direct and indirect effects on populations of children and their well-being. Demographic data are, in most cases, readily available and emphasize the quantitative importance of child populations (Micklewright 2000). This annex presents projections on demographic shifts in the 34 Mediterranean countries over the next 30 years¹.

Within 30 years, the Mediterranean region will have about 252 million more inhabitants. Many of the 34 countries in the region will experience an increase in their total population. In general, there will be more children, adults, and elderly people, compared with 2000. The most rapid and steepest increase will occur in the Middle East countries, where, in 2030, there will be 70 percent more people than in 2000. The rate of increase will be slower for North Africa and much slower for Eastern Europe and countries of the Former Soviet Union. Eastern Europe, in contrast, will experience a reduction in total population. *Figure A1.1* depicts some of these trends.

(2) ¹ The projections are based on estimates by the United Nations Population Division (UN, 2003) and World Bank (World Bank, 2003a)

Figure A1.1 Total Population in the Mediterranean – by areas (Projections to 2030)



Notes: EE, Eastern Europe – including Turkey; NA, North Africa –including Malta; E, Europe –including Cyprus, ME, Middle East – including Israel. Source: World Bank (2003a),

The projections for the North Africa population show a sharp increase in total population, by 50 percent. By 2030, a larger proportion of the population will be between the ages of 15 and 64 years old. The total population in the Middle East region will skyrocket. The number of people ages 15–64 will double, and the number of elders will triple. The child population will increase by 30 percent, and the expansion will be faster in some countries than in others. For instance, Yemen will experience an abrupt population explosion in the coming years. In 30 years there will be 32 million more people in Yemen, but only 12 million more in Lebanon

Slight modifications will occur in the population composition of the Mediterranean countries, between 2000 and 2030, the proportion of elderly persons will increase, from 9 percent to 13 percent, whereas the proportion of children ages 0–14 will decrease, from 27 percent to 22 percent. Child dependency ratios will fall considerably, primarily because of the aging of the population (as life expectancy rates increase)

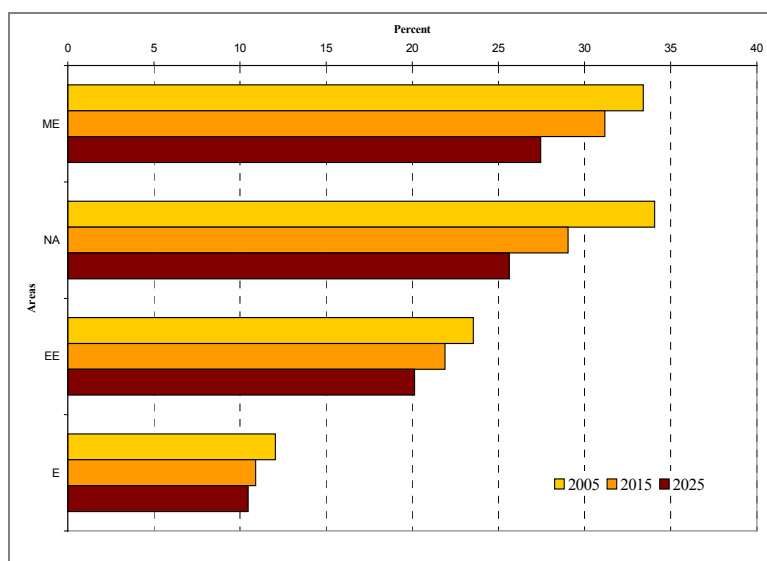
and stagnant fertility rates. European countries will experience the most drastic changes, with a declining trend in the child population and an upward trend in the elderly population.

In 30 years, the number of old people in the Mediterranean region will almost double. Europe, in particular, will experience an aging population. By 2025, the number of elderly will surpass the number of children (ages 0–14), and the elderly will constitute more than 25 percent of the total population in Europe. On average, for every child age 0–14, there will be 1.8 elderly people.

Projections for the working age group show an upward trend in most regions except for Europe. This increase, however, will be unevenly distributed among areas; not all countries will share the same expansion of this population group. In the Middle East, the total number of working age people will increase 100 percent, whereas in Europe, it will fall by 10 percent.

By 2005, a total of 164 million children ages 0–14 will live in the Mediterranean countries. This number represents 27 percent of the total population in the region (see *figure A1.2*) and almost 0.5 percent of the entire world's children. In the Middle East and North Africa countries, already one-third of the population are between the ages of 0 to 14, whereas in European countries, only 12 percent are in this age group. By 2025, despite the declining trends, children ages 0 to 14, will constitute a large share of the total population both in the Middle East and North Africa.

Figure A1.2 Percent of Children Ages 0–14 in the Total Mediterranean Population

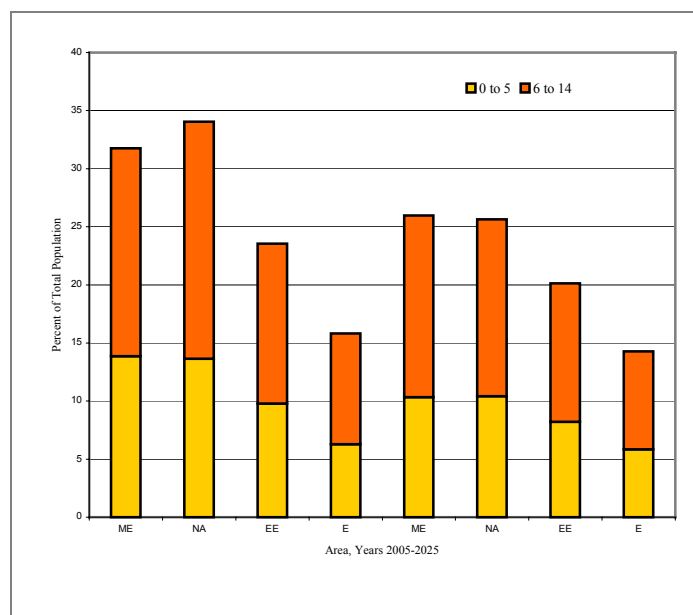


Notes: EE, Eastern Europe – including Turkey; NA, North Africa –including Malta; E, Europe –including Cyprus, ME, Middle East – including Israel Source: World Bank (2003a)

Figure A1.2 depicts, however, a downward trend in the proportion of children in all four areas. In 30 years, the proportion of children throughout the Mediterranean region will decrease by 5 percent. Despite this reduction, the total number of children in the region will increase by 10 million—from 163 million to 169 million. The child population is expected to peak at 170 million by 2015. At that time, almost 50 percent of the total number of children in the Mediterranean region will live in the Middle East countries. 70 percent of children in the Mediterranean will concentrate in countries in North Africa and the Middle East.

The data for two distinct sub-groups of children—ages 0–4 (preschool) and ages 5–14 (school-age)—show that overall both sub-groups will have the same decreasing trend and at similar rates. There are, and will continue to be, about more than twice as many children ages 6–14 than children ages 0–5. In almost all areas. And, again, the Middle East has, and will continue to have, the largest proportion of children in both age sub-groups. *Figure A1.3* shows, for 2005, the percent of children in the two sub-groups across the Mediterranean region.

Figure A1.3 Percent of Children Ages 0–4 and 5–14 in the Total Mediterranean Population 2005-2025



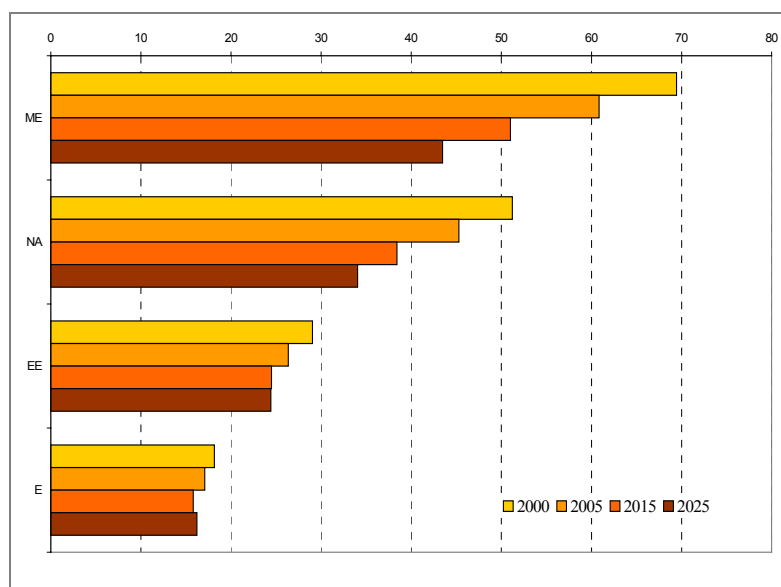
Notes: EE, Eastern Europe – including Turkey; NA, North Africa –including Malta; E, Europe –including Cyprus, ME, Middle East – including Israel Source: World Bank (2003a)

The population projections indicate that the number of young children – ages 0 to 5 - will decrease in all areas, from 9 to 7 percent. By 2025, young children ages 0 to 5 will only make up to 10 percent of the total population compared to almost 15 in 2005. The proportion of children ages 6–14 will follow a similar declining pattern. However, the total population ages 6 to 14 will increase in the Middle East countries in almost 10 million. The Middle East countries will experience the largest increase in the total child population, both preschool and school age children. But a country-by-country analysis shows that not all Middle Eastern countries will experience an increase in the number of children. Certain countries are expected to have a higher rate of increase, and some will have a decline. The largest increases in the number of children will be in Saudi Arabia and Yemen. On the other hand, the number of children will decrease in Syria, Iraq, and Lebanon. The projections for Yemen are particularly significant because they will affect the total child population throughout the Mediterranean region.

Between 2000 and 2030, the total child population in Yemen will almost double.

Although the total number of people and, therefore, children will expand in the coming years, the proportion of children compared with the total population and, particularly, the working age population will decrease in all sub-regions over the next 25 years. *Figure A1.4* presents the ratio of children to working age population across the Mediterranean region between 2000 and 2030.

Figure A1.4 Ratio of Children to Working Age Population in the Mediterranean Region (Estimates), 2000-2030



Notes: EE, Eastern Europe – including Turkey; NA, North Africa –including Malta; E, Europe –including Cyprus, ME, Middle East – including Israel Source: World Bank (2003a)

By 2025, for every child ages 0–14, there will be three working adults. The proportion of children to working adults will be much lower in Europe countries, where there will be 16 children for 100 working adults, and, in the Middle East, child dependency rates will fall significantly from 0.69:1 to 0.43:1.

ANNEX 2. STATISTICAL ANNEXES

2.1. Human Development Index – Mediterranean Region

Country	GDP per Capita (PPP US\$) 2002	Log GDP	GDP Index	Life Expectancy at Birth 2002	Life Expectancy Index	Adult Literacy 2002	Adult literacy Index	Combined GER	Combined GER Index	Education Index	HDI MR	MR HDI rank
France	26,151	4.417	0.929	79.16	0.903	99.00	0.990	91	0.910	0.963	0.9317	1
Italy	25,570	4.408	0.925	78.37	0.890	98.55	0.986	82	0.820	0.930	0.9151	2
Spain	20,697	4.316	0.890	78.31	0.889	97.81	0.978	92	0.920	0.959	0.9124	3
Israel	20,055	4.302	0.885	78.65	0.894	95.31	0.953	90	0.900	0.935	0.9048	4
Greece	18,184	4.260	0.868	78.03	0.884	97.37	0.974	81	0.810	0.919	0.8905	5
Slovenia	17,748	4.249	0.864	75.91	0.849	99.65	0.997	83	0.830	0.941	0.8846	6
Cyprus	17,725	4.249	0.864	78.09	0.885	97.45	0.975	74	0.740	0.896	0.8818	7
Malta	16,817	4.226	0.855	78.39	0.890	92.62	0.926	76	0.760	0.871	0.8720	8
Qatar	19844	4.298	0.883	74.94	0.832	82.11	0.821	81	0.810	0.817	0.8443	9
Bahrain	16,593	4.220	0.853	73.29	0.805	88.50	0.885	81	0.810	0.860	0.8393	10
UAE	20,530	4.312	0.889	75.37	0.840	77.26	0.773	67	0.670	0.738	0.8222	11
Croatia	9,967	3.999	0.768	73.80	0.813	98.45	0.985	68	0.680	0.883	0.8215	12
Kuwait	16,328	4.213	0.850	76.90	0.865	82.94	0.829	54	0.540	0.733	0.8161	13
Bulgaria	6,909	3.839	0.707	71.82	0.780	98.56	0.986	77	0.770	0.914	0.8003	14
Macedonia	6,262	3.797	0.691	73.44	0.807	94.000	0.940	70	0.700	0.860	0.7859	15
Libya	7570	3.879	0.722	72.34	0.789	81.66	0.817	89	0.890	0.841	0.7841	16
Romania	6,326	3.801	0.692	69.96	0.749	98.30	0.983	68	0.680	0.882	0.7745	17
Oman	13,247	4.122	0.816	74.06	0.818	74.41	0.744	58	0.580	0.689	0.7742	18
Saudi Arabia	11,516	4.061	0.792	73.11	0.802	77.88	0.779	58	0.580	0.713	0.7689	19
Jordan	4,106	3.613	0.620	71.96	0.783	90.87	0.909	77	0.770	0.862	0.7551	20

Human Development Index – Mediterranean Region (cont'd)

Country	GDP per Capita (PPP US\$) 2002	Log GDP	GDP Index	Life Expectancy at Birth 2002	Life Expectancy Index	Adult Literacy 2002	Adult literacy Index	Combine d GER	Combined GER Index	Education Index	HDI MR	MR HDI rank
Tunisia	6,579	3.818	0.699	72.65	0.794	73.17	0.732	76	0.760	0.741	0.7447	21
Albania	3,973	3.599	0.615	73.99	0.817	85.90	0.859	69	0.690	0.803	0.7446	22
Lebanon	4,243	3.628	0.626	70.76	0.763	86.93	0.869	76	0.760	0.833	0.7404	23
Turkey	6,176	3.791	0.688	69.94	0.749	86.00	0.860	60	0.600	0.773	0.7368	24
Iran	6,339	3.802	0.693	69.28	0.738	78.09	0.781	64	0.640	0.734	0.7215	25
Algeria	5,536	3.743	0.670	70.72	0.762	68.86	0.689	71	0.710	0.696	0.7092	26
Syria	3,385	3.530	0.588	70.29	0.755	76.08	0.761	59	0.590	0.704	0.6822	27
Egypt	3,701	3.568	0.603	68.86	0.731	56.93	0.569	76	0.760	0.633	0.6555	28
Morocco	3,767	3.576	0.606	68.35	0.723	50.73	0.507	51	0.510	0.508	0.6121	29
Yemen	783	2.894	0.343	57.43	0.541	48.98	0.490	52	0.520	0.500	0.4613	30
Serbia	na	na	na	72.69	0.795	na	na	na	na	na	na	31
Iraq	na	na	na	62.62	0.627	40.05	0.401	na	na	na	na	32
Bosnia	5,538	3.743	0.670	73.88	0.815	na	na	64	0.640	na	na	33
O. Palestine	2,788	3.445	0.555	72.74	0.796	na	Na	77	0.770	na	na	34

Notes: UAE United Arab Emirates; na, not available data. a. GDP per capita PPP US\$ Most recent 2002-2000 Data for United Arab Emirates, Libya, and Occupied Palestine refers to different standard definition, data refers to other years HDR (2003). b. Life Expectancy at birth in years c. Adult Literacy Percentage age 15 and above. Data for Macedonia and France refers to other year, source HDR (2003) d. Data refers to 2000/01 school year, combined primary, secondary, and tertiary gross enrollment ratio. Data for some countries refers to UNESCO Institute for Statistics estimates.

Source: column 1 World Bank 2003a. unless otherwise specified; column 3 World Bank 2003 a; Column 5 World Bank 2003a. Column 7 World Bank 2003a. Column 9 Human Development Report 2003.

2.2 Child Welfare Index (CWI)

MR HDI ranking	Country	Combined Enrollment rates	Combined Education Index	U5MR 2002	U5MR Index	Survival to age Five Index	GDP per capita	Log GDP	GDP Index	CWI
0.9317	France	106.611	1.000	6	0.045	0.95489	26151	4.417	0.92909	0.961
0.9151	Italy	97.776	0.978	6	0.045	0.95489	25570	4.408	0.92534	0.953
0.9124	Spain	110.733	1.000	6	0.045	0.95489	20697	4.316	0.89005	0.948
0.9048	Israel	103.713	1.000	6	0.045	0.95489	20055	4.302	0.88479	0.947
0.8905	Greece	98.844	0.988	5	0.038	0.96241	18184	4.260	0.86844	0.940
0.8846	Slovenia	104.590	1.000	5	0.038	0.96241	17748	4.249	0.86439	0.942
0.8818	Cyprus	94.995	0.950	6	0.045	0.95489	17725	4.249	0.86418	0.923
0.8720	Malta	96.974	0.970	5	0.038	0.96241	16817	4.226	0.8554	0.929
0.8443	Qatar	97.284	0.973	16	0.120	0.8797	19844	4.298	0.88302	0.912
0.8393	Bahrain	102.351	1.000	16	0.120	0.8797	16593	4.220	0.85316	0.911
0.8222	U.A.E.	86.860	0.869	9	0.068	0.93233	20530	4.312	0.8887	0.897
0.8215	Croatia	84.649	0.846	8	0.060	0.93985	9967	3.999	0.76809	0.851
0.8161	Kuwait	65.699	0.657	10	0.075	0.92481	16328	4.213	0.85047	0.811
0.8003	Bulgaria	97.176	0.972	16	0.120	0.8797	6909	3.839	0.70692	0.853
0.7859	Macedonia	88.882	0.889	26	0.195	0.80451	6262	3.797	0.69051	0.795
0.7841	Libya	na	na!	19	0.143	0.85714	7570	3.879	0.72217	na
0.7745	Romania	87.075	0.871	21	0.158	0.84211	6326	3.801	0.69221	0.802
0.7742	Oman	70.404	0.704	13	0.098	0.90226	13247	4.122	0.81557	0.807
0.7689	Saudi Arabia	67.639	0.676	28	0.211	0.78947	11516	4.061	0.7922	0.753
0.7551	Jordan	94.481	0.945	33	0.248	0.75188	4106	3.613	0.62007	0.772
0.7447	Tunisia	95.654	0.957	27	0.203	0.79699	6579	3.818	0.69875	0.817

Child Welfare Index (CWI) (cont'd)

MR HDI ranking	Country	Combined Enrollment rates	Combined Education Index	U5MR 2002	U5MR Index	Survival to age Five Index	GDP per capita	Log GDP	GDP Index	CWI
0.7446	Albania	88.312	0.883	25	0.188	0.81203	3973	3.599	0.61457	0.770
0.7404	Lebanon	87.717	0.877	32	0.241	0.7594	4243	3.628	0.62555	0.754
0.7368	Turkey	79.631	0.796	43	0.323	0.67669	6176	3.791	0.6882	0.720
0.7215	Iran	81.759	0.818	42	0.316	0.68421	6339	3.802	0.69255	0.731
0.7092	Algeria	91.364	0.914	49	0.368	0.63158	5536	3.743	0.66994	0.738
0.6822	Syria	76.226	0.762	28	0.211	0.78947	3385	3.530	0.58784	0.713
0.6555	Egypt	91.922	0.919	41	0.308	0.69173	3701	3.568	0.60274	0.738
0.6121	Morocco	65.335	0.653	44	0.331	0.66917	3767	3.576	0.60569	0.643
0.4613	Yemen	na	na	107	0.805	0.19549	783	2.894	0.34349	na
na	Serbia	61.552	0.616	19	0.143	0.85714	na	na	na	na
na	Bosnia	na	na	18	0.135	0.86466	5538	3.743	0.67	na
na	Iraq	71.751	0.718	133	1.000	0	na	na	na	na
na	O. Palestine	92.044	0.920	25	0.188	0.81233	2788	3.445	0.55545	0.763
0.9317	France	92.36	0.924	6	0.045	0.955	26,151	4.417	0.929	0.936
0.9151	Italy	90.51	0.905	6	0.045	0.955	25,570	4.408	0.925	0.928
0.9124	Spain	93.73	0.937	6	0.045	0.955	20,697	4.316	0.890	0.927
0.9048	Israel	88.43	0.884	6	0.045	0.955	20,055	4.302	0.885	0.908
0.8905	Greece	87.37	0.874	5	0.038	0.962	18,184	4.260	0.868	0.902
0.8846	Slovenia	88.58	0.886	5	0.038	0.962	17,748	4.249	0.864	0.904

Notes: a. Data refers to 1998-2000 period. Data for Iran and Turkey refers to 1996 b. data refers to 2002, the probability of dying under age five is expressed as a rate per 1,000, data for Occupied Palestine refers to West Bank and Gaza c. GDP per capita PPP US\$ Data for United Arab Emirates, Libya, and Occupied Palestine refers to different standard definition, data refers to other years HDR (2003).Source: column 1 World Bank 2003a; column 3 World Bank 2003a; column 6 World Bank 2003a.

Child Welfare Index (CWI) (cont'd)

MR HDI ranking	Country	Combined Enrollment rates	Combined Education Index	U5MR 2002	U5MR Index	Survival to age Five Index	GDP per capita	Log GDP	GDP Index	CWI
0.8818	Cyprus	88.3	0.883	6	0.045	0.955	17,725	4.249	0.864	0.901
0.8720	Malta	79.24	0.792	5	0.038	0.962	16,817	4.226	0.855	0.870
0.8443	Qatar	78.01	0.780	16	0.12	0.880	19844	4.298	0.883	0.848
0.8393	Bahrain	92.11	0.921	16	0.12	0.880	16,593	4.220	0.853	0.885
0.8222	U.A.E.	67.38	0.674	9	0.068	0.932	20,530	4.312	0.889	0.832
0.8215	Croatia	79.03	0.790	8	0.06	0.940	9,967	3.999	0.768	0.833
0.8161	Kuwait	49.72	0.497	10	0.075	0.925	16,328	4.213	0.850	0.757
0.8003	Bulgaria	87.63	0.876	16	0.12	0.880	6,909	3.839	0.707	0.821
0.7859	Macedonia	80.97	0.810	26	0.195	0.805	6,262	3.797	0.691	0.768
0.7841	Libya	na	na	19	0.143	0.857	7570	3.879	0.722	na
0.7745	Romania	79.61	0.796	21	0.158	0.842	6,326	3.801	0.692	0.777
0.7742	Oman	59.16	0.592	13	0.098	0.902	13,247	4.122	0.816	0.770
0.7689	Saudi Arabia	51.13	0.511	28	0.211	0.789	11,516	4.061	0.792	0.698
0.7551	Jordan	75.87	0.759	33	0.248	0.752	4,106	3.613	0.620	0.710
0.7447	Tunisia	70.28	0.703	27	0.203	0.797	6,579	3.818	0.699	0.733
0.7446	Albania	73.89	0.739	25	0.188	0.812	3,973	3.599	0.615	0.722
0.7404	Lebanon	70.24	0.702	32	0.241	0.759	4,243	3.628	0.626	0.696
0.7368	Turkey	51.3	0.513	43	0.323	0.677	6,176	3.791	0.688	0.626
0.7215	Iran	71.18	0.712	42	0.316	0.684	6,339	3.802	0.693	0.696
0.7092	Algeria	61.83	0.618	49	0.368	0.632	5,536	3.743	0.670	0.640
0.6822	Syria	39.05	0.391	28	0.211	0.789	3,385	3.530	0.588	0.589
0.6555	Egypt	78.59	0.786	41	0.308	0.692	3,701	3.568	0.603	0.693

Child Welfare Index (CWI) (cont'd)

MR HDI rankin g	Country	Combined Enrollment rates	Combined Education Index	U5MR 2002	U5MR Index	Survival to age Five Index	GDP per capita	Log GDP	GDP Index	CWI
0.6121	Morocco	29.94	0.299	44	0.331	0.669	3,767	3.576	0.606	0.525
0.4613	Yemen	36.98	0.370	107	0.805	0.195	783	2.894	0.343	0.303
na	Serbia	na	na	19	0.143	0.857	na	na	na	na
na	Bosnia	na	na	18	0.135	0.865	5,538	3.743	0.670	na
na	Iraq	32.98	0.330	133	1	0.000	na	na	na	na
na	O. Palestine	85.7	0.857	24.96	0.188	0.812	2,788	3.445	0.555	0.742

Notes: a. Combined Gross Enrollment in primary and secondary. Data refers to 2000/2001 period. b. data refers to 2002, the probability of dying under age five is expressed as a rate per 1,000.data for Occupied Palestine refers to West Bank and Gaza c. GDP per capita PPP US\$ Data for United Arab Emirates, Libya, and Occupied Palestine refers to different standard definition, data refers to other years HDR (2003).Source: column 1 UNESCO Global Education Digest; column 3 World Bank 2003a; column 6 World Bank 2003a

2.3. Child Gender Index (CGI)

Country	Net Secondary Male	Net Secondary Male Index	Male Education Index	Male total population secondary 2000	Male share of total population	Net Secondary Female	Female Education Index	Female Education Index -1	Female total secondary population	share of female secondary population	Equally distribute d index	Equally distribu ted educati on index -1
France	91.41	0.9141	1.094	2788	0.5103423	93.36	0.934	1.071	2675	0.4896577	1.083	0.924
Italy	90.11	0.9011	1.110	2361	0.5140431	90.94	0.909	1.100	2232	0.4859569	1.105	0.905
Spain	92.19	0.9219	1.085	1427	0.5129403	95.36	0.954	1.049	1355	0.4870597	1.067	0.937
Israel	88	0.88	1.136	338	0.5121212	88.89	0.889	1.125	322	0.4878788	1.131	0.884
Greece	85.96	0.8596	1.163	385	0.5140187	88.86	0.889	1.125	364	0.4859813	1.145	0.873
Slovenia	87.32	0.8732	1.145	109	0.5	89.91	0.899	1.112	109	0.5	1.129	0.886
Cyprus	87.29	0.8729	1.146	40	0.5263158	89.34	0.893	1.119	36	0.4736842	1.133	0.882
Malta	81.2	0.812	1.232	21	0.5	77.17	0.772	1.296	21	0.5	1.264	0.791
Qatar	74.55	0.7455	1.341	29	0.5	81.64	0.816	1.225	29	0.5	1.283	0.779
Bahrain	88.93	0.8893	1.124	33	0.5	95.48	0.955	1.047	33	0.5	1.086	0.921
U.A.E.	63.51	0.6351	1.575	167	0.5369775	71.79	0.718	1.393	144	0.4630225	1.490	0.671
Croatia	78.45	0.7845	1.275	245	0.5114823	79.64	0.796	1.256	234	0.4885177	1.265	0.790
Kuwait	49.23	0.4923	2.031	139	0.5110294	50.23	0.502	1.991	133	0.4889706	2.012	0.497
Bulgaria	88.47	0.8847	1.130	397	0.5122581	86.74	0.867	1.153	378	0.4877419	1.141	0.876
Macedonia	81.86	0.8186	1.222	135	0.5172414	80.03	0.800	1.250	126	0.4827586	1.235	0.810
Libya	na	na	na	409	0.5099751	na	na	na	393	0.4900249	na	na
Romania	78.7	0.787	1.271	1389	0.5095378	80.56	0.806	1.241	1337	0.4904622	1.256	0.796
Oman	58.73	0.5873	1.703	179	0.502809	59.59	0.596	1.678	177	0.497191	1.690	0.592

Child Gender Index (CGI) (cont'd)

Country	Net Secondary Male	Net Secondary Male Index	Male Education Index	Male total population secondary 2000	Male share of total population	Net Secondary Female	Female Education Index	Female Education Index -1	Female total secondary population	share of female secondary population	Equally distributed index	Equally distribu ted educatio n index -1
Saudi Arabia	52.28	0.5228	1.913	1295	0.5042835	49.92	0.499	2.003	1273	0.4957165	1.958	0.511
Jordan	73.4	0.734	1.362	361	0.514245	78.46	0.785	1.275	341	0.485755	1.320	0.758
Tunisia	68.76	0.6876	1.454	756	0.511502	71.86	0.719	1.392	722	0.488498	1.424	0.702
Albania	72.87	0.7287	1.372	265	0.5216535	75	0.750	1.333	243	0.4783465	1.354	0.739
Lebanon	67.21	0.6721	1.488	315	0.5130293	73.34	0.733	1.364	299	0.4869707	1.427	0.701
Turkey	58.99	0.5899	1.695	3876	0.5044904	43.18	0.432	2.316	3807	0.4955096	2.003	0.499
Iran	74.11	0.7411	1.349	5764	0.5073051	68.11	0.681	1.468	5598	0.4926949	1.408	0.710
Algeria	60.39	0.6039	1.656	2122	0.5099736	63.33	0.633	1.579	2039	0.4900264	1.618	0.618
Syria	41.04	0.4104	2.437	1322	0.5072909	37	0.370	2.703	1284	0.4927091	2.568	0.389
Egypt	80.23	0.8023	1.246	4719	0.5153435	76.86	0.769	1.301	4438	0.4846565	1.273	0.786
Morocco	32.74	0.3274	3.054	1925	0.5081837	27.04	0.270	3.698	1863	0.4918163	3.371	na
Yemen	52.08	0.5208	1.920	1532	0.5113485	21.07	0.211	4.746	1464	0.4886515	3.301	0.303
Palestine	74.68	0.7468	1.339	216	0.5106383	80.91	0.809	1.236	207	0.4893617	1.289	0.776
Serbia	76.55	0.7655	1.306	646	0.513922	76.06	0.761	1.315	611	0.486078	1.310	0.763
Bosnia	na	na	na	257	0.5160643	na	na	na	241	0.4839357	na	na
Iraq	39.61	0.3961	2.525	1707	0.5115373	26.04	0.260	3.840	1630	0.4884627	3.167	0.316

Notes: Data refers to most recent year available during 1991-2002. Source World Bank Internal Database

Child Gender Index (Cont'd)

Country	Male U5MR	Male U5MR Index	Male Prob of Surviving by Age Five	Male Age 5 Survival Index (power)	Male 0 to 5 Pop. Share	Female U5MR	Female U5MR Index	Female Prob of Surviving by Age Five	Female Age Five Survival Index(power)	Female 0 to 5 Pop. Share	Equally distributed survival index	Equally distributed survival index -1
France	5	0.041	0.959	1.043	51.11828453	4	0.036	0.964	1.037	48.88171547	104.012	0.010
Italy	6	0.049	0.951	1.052	51.47759771	5	0.045	0.955	1.047	48.52240229	104.951	0.010
Spain	5	0.041	0.959	1.043	51.72413793	4	0.036	0.964	1.037	48.27586207	104.015	0.010
Israel	7	0.057	0.943	1.061	51.42045455	6	0.054	0.946	1.057	48.57954545	105.906	0.009
Greece	7	0.057	0.943	1.061	51.61290323	6	0.054	0.946	1.057	48.38709677	105.907	0.009
Slovenia	6	0.049	0.951	1.052	50.4587156	4	0.036	0.964	1.037	49.5412844	104.462	0.010
Cyprus	7	0.057	0.943	1.061	51.5625	7	0.063	0.937	1.067	48.4375	106.399	0.009
Malta	8	0.066	0.934	1.070	51.72413793	6	0.054	0.946	1.057	48.27586207	106.388	0.009
Qatar	17	0.139	0.861	1.162	50	15	0.135	0.865	1.156	50	115.908	0.009
Bahrain	9	0.074	0.926	1.080	48	7	0.063	0.937	1.067	52	107.323	0.009
U.A.E.	13	0.107	0.893	1.119	51.01351351	11	0.099	0.901	1.110	48.98648649	111.473	0.009
Croatia	8	0.066	0.934	1.070	51.45985401	7	0.063	0.937	1.067	48.54014599	106.878	0.009
Kuwait	12	0.098	0.902	1.109	51.40562249	10	0.090	0.910	1.099	48.59437751	110.419	0.009
Bulgaria	18	0.148	0.852	1.173	51.42857143	16	0.144	0.856	1.168	48.57142857	117.082	0.009
Macedonia	16	0.131	0.869	1.151	51.72413793	13	0.117	0.883	1.133	48.27586207	114.211	0.009
Libya	31	0.254	0.746	1.341	51.26498003	29	0.261	0.739	1.354	48.73501997	134.699	0.007
Romania	23	0.189	0.811	1.232	51.40949555	20	0.180	0.820	1.220	48.59050445	122.623	0.008
Oman	24	0.197	0.803	1.245	50.54466231	22	0.198	0.802	1.247	49.45533769	124.603	0.008
Saudi Arabia	30	0.246	0.754	1.326	50.96824167	27	0.243	0.757	1.321	49.03175833	132.380	0.008

Child Gender Index (Cont'd)

Country	Male U5MR	Male U5MR Index	Male Prob of Surviving by Age Five	Male Age 5 Survival Index (power)	Male 0 to 5 Pop. Share	Female U5MR	Female U5MR Index	Female Prob of Surviving by Age Five	Female Age Five Survival Index(power)	Female 0 to 5 Pop. Share	Equally distributed survival index	Equally distributed survival index -1
Jordan	27	0.221	0.779	1.284	51.03030303	24	0.216	0.784	1.276	48.96969697	128.012	0.008
Tunisia	33	0.270	0.730	1.371	51.6097561	27	0.243	0.757	1.321	48.3902439	134.690	0.007
Albania	35	0.287	0.713	1.402	51.1627907	30	0.270	0.730	1.370	48.8372093	138.671	0.007
Lebanon	34	0.279	0.721	1.386	50.92936803	28	0.252	0.748	1.337	49.07063197	136.231	0.007
Turkey	46	0.377	0.623	1.605	50.18368846	40	0.360	0.640	1.563	49.81631154	158.440	0.006
Iran	45	0.369	0.631	1.584	51.0503369	39	0.351	0.649	1.542	48.9496631	156.349	0.006
Algeria	55	0.451	0.549	1.821	50.98516715	44	0.396	0.604	1.657	49.01483285	174.042	0.006
Syria	27	0.221	0.779	1.284	50.90771558	23	0.207	0.793	1.261	49.09228442	127.299	0.008
Egypt	46	0.377	0.623	1.605	51.40477512	44	0.396	0.604	1.657	48.59522488	163.027	0.006
Morocco	58	0.475	0.525	1.906	50.89805825	55	0.495	0.505	1.982	49.10194175	194.351	0.005
Yemen	109	0.893	0.107	9.385	51.34825014	101	0.910	0.090	11.100	48.65174986	1021.918	0.001
Palestine	na	na	na	na	na	na	na	na	na	na	na	na
Serbia	15	0.123	0.877	1.140	51.64034022	12	0.108	0.892	1.121	48.35965978	113.101	0.009
Bosnia	19	0.156	0.844	1.184	51.40562249	15	0.135	0.865	1.156	48.59437751	117.075	0.009
Iraq	122	1.000	0.000	#DIV/0!	51.07134448	111	1.000	0.000	na	48.92865552	na	na

Notes: World Bank 20003a Internal Database

Child Gender Index (Cont'd)

Country	GDP per capita	Log GDP per capita	Economic Dimension	CGI
France	26,151	4.417488301	0.929088509	0.620749429
Italy	25,570	4.407730728	0.925338481	0.613327044
Spain	20,697	4.3159074	0.890048962	0.612245045
Israel	20,055	4.302222666	0.884789649	0.59285058
Greece	18,184	4.259689423	0.868443283	0.583779596
Slovenia	17,748	4.24914942	0.864392552	0.586642056
Cyprus	17,725	4.248586244	0.864176112	0.58535556
Malta	16,817	4.225748524	0.855399125	0.552045299
Qatar	19844	4.297629218	0.883024296	0.55699755
Bahrain	16,593	4.219924913	0.853160997	0.594455142
U.A.E.	20,530	4.312388949	0.888696752	0.522865821
Croatia	9,967	3.998564458	0.768087801	0.522570946
Kuwait	16,328	4.212932992	0.850473863	0.452223243
Bulgaria	6,909	3.839415193	0.706923594	0.530547112
Macedonia	6,262	3.796713063	0.690512323	0.502976729
Libya	7570	3.87909588	0.722173666	na
Romania	6,326	3.801129188	0.692209526	0.498792886
Oman	13,247	4.122117536	0.81557169	0.471713919
Saudi Arabia	11,516	4.061301656	0.792198946	0.436860504
Jordan	4,106	3.613418945	0.620068772	0.461872737
Tunisia	6,579	3.818159886	0.69875476	0.469527098
Albania	3,973	3.599118565	0.614572854	0.453506647
Lebanon	4,243	3.627673032	0.625546899	0.444501436

Child Gender Index (Cont'd)

Country	GDP per capita	Log GDP per capita	Economic Dimension	CGI
Turkey	6,176	3.790707287	0.688204184	0.397942422
Iran	6,339	3.802020752	0.692552172	0.469740089
Algeria	5,536	3.743196081	0.669944689	0.431216059
Syria	3,385	3.529558673	0.587839613	0.328381123
Egypt	3,701	3.568319085	0.602736005	0.464825223
Morocco	3,767	3.57599562	0.605686249	na
Yemen	783	2.893761762	0.343490301	0.215801432
Palestine	2,788	3.445292769	0.555454562	na
Serbia	na	na	na	na
Bosnia	5,538	3.743352951	0.670004977	na
Iraq	na	na	na	na

Notes: World Bank internal database

3.4. Child Deprivation Index

Country	U5MR 2002 or most recent	U5MR	U5MR	out of school children	out of school children	out of school children	Percent of children under-weight 1995- 2001(under- five)	% of population without access to water 2000 (%)	Un- weighted average	Un-weighted average		CDI
Libya	19	1.9	6.859	na	na	na	5	28	16.5	4492.125	na	na
Oman	13	1.3	2.197	150.50	15.05	3408.86	24	61	42.5	76765.625	26774.9959	29.9164326
Saudi Arabia	28	2.8	21.952	1404.70	140.47	2771728.88	14	5	9.5	857.375	924663.652	97.4229469
Jordan	33	3.3	35.937	46.20	4.62	98.61	5	4	4.5	91.125	78.645376	4.2844104
Tunisia	27	2.7	19.683	21.80	2.18	10.36	4	20	12	1728	586.720077	8.37163561
Lebanon	32	3.2	32.768	111.50	11.15	1386.20	3	0	1.5	3.375	500.356958	7.9388936
Turkey	43	4.3	79.507	na	0.00	0.00	8	18	13	2197	na	na
Iran	42	4.2	74.088	na	0.00	0.00	11	8	9.5	857.375	na	na
Algeria	49	4.9	117.65	117.40	11.74	1618.10	6	11	8.5	614.125	783.207008	9.21776266
Syria	28	2.8	21.952	na	0.00	0.00	13	20	16.5	4492.125	na	na
Egypt	41	4.1	68.921	610.70	61.07	227763.31	3.1	3	3.05	28.372625	76134.1266	42.3831395
Morocco	44	4.4	85.184	1035.70	103.57	1110968.97	9	20	14.5	3048.625	371684.431	71.8993212
Yemen	107	10.7	1225	na	0.00	0.00	46	31	38.5	57066.625	na	na
O. Palestine	24.96	2.496	15.55	3.10	0.31	0.03	3	14	8.5	614.125	205.751597	5.90356576
Serbia	19	1.9	6.859	na	0.00	0.00	2	na	na	na	na	na
Bosnia	18	1.8	5.832	na	0.00	0.00	4	na	na	na	na	na
Iraq	133	13.3	2352.6	248.70	24.87	15382.52	16	na	na	na	na	na

Notes: column 1, World Bank internal database; Column 4, UNESCO EFA (2002; 290) out-of-school children in thousands, data refers to 1999/2000 or most recent year; column 7 and 8, HDR (2003)

Child Deprivation Index (with child poverty as an indicator)

Country	U5MR	U5MR	U5MR	PISA literacy scale (at level 2 or below)	PISA literacy scale (at level 2 or below)	Child Poverty Rate	Child Poverty Rate	Average	CDI
France	6	0.600	0.216	15.2	3511.808	7.9	493.039	1335.021	11.011066
Italy	6	0.600	0.216	19	6859	20.5	8615.125	5158.113667	17.27813923
Spain	6	0.600	0.216	16.3	4330.747	12.3	1860.867	2063.943333	12.732077
Israel	6	0.600	0.216	33	35937	13.3	2352.637	12763.28433	23.36975439
Greece	5	0.500	0.125	25	15625	12.3	1860.867	5828.664	17.99656725
Slovenia		0.000	0		0		0	0	0
Malta		0.000	0		0		0	0	0
Croatia		0.000	0		0		0	0	0
Bulgaria	16	1.600	4.096	40	64000	na			
Macedonia	26	2.600	17.576	63	250047	na			
Bosnia		0.000	0		0		0	0	0
Romania	21	2.100	9.261	na		10	1000		
Albania	25	2.500	15.625	71	357911		0	119308.875	49.22936685

Notes: Sources: Column 4, Percentage of 15 years old at level 1 and below level 1 on the PISA reading literacy scale. OECD PISA database, 2001. Column 6 Child poverty rates, UNICEF 2000 report card, LIS database

3.5. Child Developmental Welfare Index

3.5.1. Early Welfare Child Index

Country	Stunting Most recent data 1996-2000	Percent of under 5 malnourished	Percent of under Five not malnourished Index	GER Pre-Primary Enrollment	GER Pre-primary Enrollment			Survival to Age Five Index	GDP per Capita	Log GDP per Capita	GDP Dimension	Nutrition Dimension	ECWI
France	na	aa	na	114.39	1.000	6	0.04511278	0.95488722	26,151	4.417488301	0.929088509	na	na
Italy	na	na	na	95.49	0.955	6	0.04511278	0.95488722	25,570	4.407730728	0.925338481	na	na
Spain	na	na	na	101.78	1.000	6	0.04511278	0.95488722	20,697	4.3159074	0.890048962	na	na
Israel	na	na	na	112.58	1.000	6	0.04511278	0.95488722	20,055	4.302222666	0.884789649	na	na
Greece	na	na	na	72.15	0.722	5	0.03759398	0.96240602	18,184	4.259689423	0.868443283	na	na
Slovenia	na	na	na	74.81	0.748	5	0.03759398	0.96240602	17,748	4.24914942	0.864392552	na	na
Cyprus	na	na	na	59.72	0.597	6	0.04511278	0.95488722	17,725	4.248586244	0.864176112	na	na
Malta	na	na	na	100.29	1.000	5	0.03759398	0.96240602	16,817	4.225748524	0.855399125	na	na
Qatar	8.1	0.157	0.843	29.89	0.299	16	0.12030075	0.87969925	19844	4.297629218	0.883024296	0.861513067	0.681
Bahrain	9.7	0.188	0.812	39.22	0.392	16	0.12030075	0.87969925	16,593	4.219924913	0.853160997	0.846039179	0.697
UAE	16.7	0.323	0.677	84.29	0.843	9	0.06766917	0.93233083	20,530	4.312388949	0.888696752	0.804656709	0.845
Croatia	0.8	0.015	0.985	40.03	0.400	8	0.06015038	0.93984962	9,967	3.998564458	0.768087801	0.962187868	0.710
Kuwait	23.8	0.460	0.540	113	1.130	10	0.07518797	0.92481203	16,328	4.212932992	0.850473863	0.732231934	0.904
Bulgaria	na	na	na	67.88	0.679	16	0.12030075	0.87969925	6,909	3.839415193	0.706923594	na	na
Macedonia	6.9	0.133	0.867	28.8	0.288	26	0.19548872	0.80451128	6,262	3.796713063	0.690512323	0.835524498	0.605
Libya	15.1	0.292	0.708	7.85	0.079	19	0.14285714	0.85714286	7570	3.87909588	0.722173666	0.782536612	0.528
Romania	7.8	0.151	0.849	72.97	0.730	21	0.15789474	0.84210526	6,326	3.801129188	0.692209526	0.845617428	0.756
Oman	22.9	0.443	0.557	4.76	0.048	13	0.09774436	0.90225564	13,247	4.122117536	0.81557169	0.7296578	0.531
Saudi Arabia	19.9	0.385	0.615	4.96	0.050	28	0.21052632	0.78947368	11,516	4.061301656	0.792198946	0.702280362	0.515
Jordan	7.8	0.151	0.849	30.62	0.306	33	0.2481203	0.7518797	4,106	3.613418945	0.620068772	0.800504647	0.576
Tunisia	12.3	0.238	0.762	15.82	0.158	27	0.20300752	0.79699248	6,579	3.818159886	0.69875476	0.779540728	0.545

Early Welfare Child Index (cont'd)

Country	Stunting Most recent data 1996-2000	Percent of under 5 malnourished	Percent of under Five not malnourished Index	GER Pre-Primary Enrollment	GER Pre-primary Enrollment			Survival to Age Five Index	GDP per Capita	Log GDP per Capita	GDP Dimension	Nutrition Dimension	ECWI
Albania	31.7	0.613	0.387	43.36	0.434	30	0.22556391	0.77443609	3,973	3.599118565	0.614572854	0.580641643	0.543
Lebanon	12.2	0.236	0.764	70.83	0.708	32	0.2406015	0.7593985	4,243	3.627673032	0.625546899	0.761710854	0.699
Turkey	16	0.309	0.691	5.68	0.057	43	0.32330827	0.67669173	6,176	3.790707287	0.688204184	0.683606987	0.476
Iran	15.4	0.298	0.702	16.98	0.170	42	0.31578947	0.68421053	6,339	3.802020752	0.692552172	0.693169093	0.519
Algeria	18	0.348	0.652	3.35	0.034	49	0.36842105	0.63157895	5,536	3.743196081	0.669944689	0.641708236	0.448
Syria	20.8	0.402	0.598	9.72	0.097	28	0.21052632	0.78947368	3,385	3.529558673	0.587839613	0.693576301	0.460
Egypt	24.9	0.482	0.518	12.49	0.125	41	0.30827068	0.69172932	3,701	3.568319085	0.602736005	0.605052283	0.444
Morocco	22.6	0.437	0.563	53.41	0.534	44	0.33082707	0.66917293	3,767	3.575995629	0.605686249	0.616017801	0.585
Yemen	51.7	1.000	0.000	0.35	0.004	107	0.80451128	0.19548872	783	2.893761762	0.343490301	0.097744361	0.148
Palestine	7.2	0.139	0.861	33.84	0.338	24.96	0.18766917	0.81233083	2,788	3.445292769	0.555454562	0.836532918	0.577
Serbia	5.1	0.099	0.901	30.53	0.305	19	0.14285714	0.85714286	na	na	na	0.879248411	na
Bosnia	9.7	0.188	0.812	na	na	18	0.13533835	0.86466165	5,538	3.743352951	0.670004977	0.838520382	na
Iraq	22.1	0.427	0.573	5.74	0.057	133	1	0	na	na	na	0.286266925	na

Notes: a. Stunting prevalence (percent) of child under five mortality rate by 1,000 per lives. Source: column 1 UNICEF 2003a

3.5.2. School-Aged Welfare Child Index

Country	5-14 Mortality rate Female	5-14 Mortality rate Male	Avg Mortality Rate	Survival by age 5- 14	Survival age 5-14 Index	Primary completion	Primary Completion Index	GDP per capita	Log GDP per capita	GDP Index	Average	SCWI
France	23.4	48.2	35.8	98	0.95991984	na	na	26,151	4.417	0.929	na	na
Italy	na	na	na	100	1	90.57	0.831607143	25,570	4.408	0.925	63.83	0.919
Spain	na	na	na	na	na	91.41	0.846607143	20,697	4.316	0.890	na	na
Israel	11	13.5	12.25	87.75	0.75450902	88.14	0.788214286	20,055	4.302	0.885	58.92	0.809
Greece	21.4	32.1	26.75	73.25	0.46392786	91.77	0.853035714	18,184	4.260	0.868	55.30	0.728
Slovenia	12.7	20.8	16.75	83.25	0.66432866	95.63	0.921964286	17,748	4.249	0.864	59.91	0.817
Cyprus	na	na	na	100	1	na	na	17,725	4.249	0.864	na	na
Malta	na	na	na	na	na	98.52	0.973571429	16,817	4.226	0.855	na	na
Qatar	na	na	na	na	na	44	0	19844	4.298	0.883	na	na
Bahrain	na	na	na	na	na	91	0.839285714	16,593	4.220	0.853	na	na
Kuwait	na	na	na	na	na	70	0.464285714	16,328	4.213	0.850	na	na
UAE	na	na	na	na	na	80	0.642857143	20,530	4.312	0.889	na	na
Croatia	na	na	na	na	na	96	0.928571429	9,967	3.999	0.768	na	na
Bulgaria	na	na	na	na	na	92	0.857142857	6,909	3.839	0.707	na	na
Macedonia	na	na	na	na	na	91	0.839285714	6,262	3.797	0.691	na	na
Libya	na	na	na	97	0.93987976	na	na	7570	3.879	0.722	na	na
Romania	na	na	na	na	na	98	0.964285714	6,326	3.801	0.692	na	na
Oman	na	na	na	99	0.97995992	76	0.571428571	13,247	4.122	0.816	58.61	0.789
Saudi Arabia	19.8	27.2	23.5	76.5	0.52905812	69	0.446428571	11,516	4.061	0.792	48.76	0.589
Jordan	na	na	na	na	na	104	1.071428571	4,106	3.613	0.620	na	na
Tunisia	na	na	na	97	0.93987976	91	0.839285714	6,579	3.818	0.699	62.90	0.826

School-Aged Welfare Child Index (cont'd)

Country	5-14 Mortality rate Female	5-14 Mortality rate Male	Avg Mortality Rate	Survival by age 5- 14	Survival age 5-14 Index	Primary completion	Primary Completion Index	GDP per capita	Log GDP per capita	GDP Index	Average	SCWI
Albania	na	na	na	81	0.61923848	89	0.803571429	3,973	3.599	0.615	56.87	0.679
Lebanon	na	na	na	na	na	70	0.464285714	4,243	3.628	0.626	na	na
Turkey	na	na	na	na	na	92	0.857142857	6,176	3.791	0.688	na	na
Iran	39.8	60	49.9	50.1	0	92	0.857142857	6,339	3.802	0.693	47.60	0.517
Algeria	na	na	na	94	0.87975952	91	0.839285714	5,536	3.743	0.670	61.89	0.796
Syria	17.8	28.1	22.95	77.05	0.54008016	90	0.821428571	3,385	3.530	0.588	55.88	0.650
Egypt	7.5	20.4	13.95	86.05	0.72044088	99	0.982142857	3,701	3.568	0.603	61.88	0.768
Morocco	na	na	na	na	na	55	0.196428571	3,767	3.576	0.606	na	na
Yemen	na	na	na	na	na	58	0.25	783	2.894	0.343	na	na
Serbia	na	na	na	na	na	96	0.928571429	na	na	na	na	na
Bosnia	na	na	na	na	na	88	0.785714286	5,538	3.743	0.670	na	na
Palestine	na	na	na	na	na	na	na	2,788	3.445	0.555	na	na
Iraq	na	na	na	98	0.95991984	52	0.142857143	na	na	na	na	na

Notes: column 1 [http://www3.who.int/whosis/mort/table1.cfm?path=whosis,whsa,mort_table1&language=englishAnnex 12], column 6, primary completion rate World Bank Internal Database [<http://sima/edstats/DataRummageBin/PrimaryCompletionRate/PCR/excelfile>].