

## **Booklet B.3 The Economic Impact of Sexual and Reproductive Health**

This booklet provides an overview of how Sexual and Reproductive Health (SRH) has an impact on the economy and especially on poverty. This can be used as a justification to prioritize SRH in the development agenda. The example of AIDS will be used to illustrate how economists have modelled this economic impact. However, it is also possible to undertake a similar analysis of the economic impact of other SRH issues, such as unwanted pregnancy or maternal health.

This booklet answers questions such as:

- What does economic impact mean?
- What are the most important ways in which AIDS and other SRH problems affect the economy?
- What are the limitations of the models that economists use to determine the economic impact?
- Why is it more useful to look at the economic impact at household, company or government level than at the economy as a whole?

### **B3.1 What is economic impact?**

Economic impact is the effect that something (for example, SRH) has on the economy. The analysis of the economic impact of SRH problems and interventions can be used to advocate for the necessity of spending more on SRH interventions. It does this by illustrating the economic costs of not intervening, or by clarifying the direct link between sexual and reproductive ill-health and poverty. Economic impact studies differ from cost-effectiveness studies (which are discussed in Booklet A3), mainly because they place the intervention in a wider societal context, including its impact on variables outside of the health sector.

Economic impact studies often use economic models, which can produce confusing results that seem quite obscure for those unfamiliar with the methodology. However, the basic concepts and reasoning behind the models is rather straightforward and can prove helpful when arguing for more resources for SRH.

First, the **macro economic** impact is the impact on the size and growth of economic variables that cover the economy as a whole. For example, the total volume of savings, investment and consumption by the different economic actors (households, companies, government, and the foreign sector) are key macroeconomic variables. As such, the macroeconomic impact follows the **micro economy**, the level at which the different economic actors are looked at individually. This covers, for example, the demand of consumers for certain products, such as drugs, the supply of those products by companies and the interaction between them, which determines the price of products.

The most aggregated macroeconomic variable is the national income, which is the total value of goods and services produced in an economy. This is most often expressed in terms of the Gross Domestic Product (GDP) or the growth of GDP, also called **economic growth**. Another important measure of the macroeconomic impact is the income per capita (per person), which reflects the change in population growth compared to the change in economic growth. This measures, for example, how while AIDS might lead to a reduction in the total value of the economy (reduction in economic growth), there will also be fewer people to share this income with (reduction in population growth). As a result, depending how much economic

growth and population growth are reduced relatively, income per capita might go down or up. At the micro level, there are many economic variables that can illustrate the economic impact of ill health, such as changes in household consumption, private sector investment, wages, prices for goods and services, or government expenditure on health as a percentage of the total government budget.

Advocacy for public health interventions often refers to the macroeconomic impact with statements like “a 10 per cent reduction in malaria is associated with 0.4 per cent higher growth of national income”. However, this is only the tip of the iceberg. Given that the impact of illness and death are greatest at micro level, much of the effect will be diluted by the time it reaches the macro level. It is very difficult for economic modellers to forecast and combine all the interrelated effects over a longer time frame, especially since an economy will adapt the way it works to different circumstances, such as an increase in ill health.

For example, private companies will find ways to minimize the costs of ill health of employees, because they have to guard their profits. They might decide to lower health care benefits or reduce the size of their workforce rather than suffer lower profits. So there may not be a visible economic impact caused by loss-making companies. Instead, there might be an economic impact caused by increased household poverty as a result of companies lowering health care benefits or reducing the size of their workforce. The way in which increased poverty subsequently interacts with the macro economy is less well understood.

Therefore, it is often more useful to concentrate on the economic impact at micro level, for example, on household poverty or government revenue and expenditure. This information can be just as useful for advocacy and as an illustration of the economic benefit of addressing SRH. Moreover, more detailed studies can inform policy decisions, for example, about the importance of interventions to counteract the impact of ill health in certain areas (e.g., the business sector) or for specific population groups (e.g., poor people in rural areas). An analysis of the economic impact of AIDS at the household level could help identify particular characteristics that make certain households more vulnerable to poverty due to AIDS, such as gender, geographical location, social status or income. Once such disaggregated studies have produced accurate results, they can be fed into the macroeconomic, aggregated models.

### **B3.2 Economic impact of sexual and reproductive health**

In general, the health status of a population will have an economic impact. However, SRH will have a particular economic impact because of the focus on 1) sexually active people, 2) women, and 3) family planning.

First, the burden of sexual and reproductive ill health falls mostly on *sexually active people*, which is also the age at which people are most active economically. This is in contrast to most other diseases that hit hardest amongst the youngest or oldest in a population, people who are dependents rather than income earners or carers. Sexual and reproductive ill health will therefore significantly lower the productivity in households and in the labour force, thus affecting the capacity of the economy as a whole.

Second, WHO’s 2001 showed that SRH problems accounted for 32% of the global burden of disease of women of reproductive age.<sup>1</sup> This is important because, even though it is not always acknowledged in official statistics and national accounts,

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<sup>1</sup> <http://www.who.int/healthinfo/bodproject/en/index.html>

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women make a significant contribution to the production of goods and services in every country. This can be through formal or informal wage labour or unpaid work in the household. Moreover, women also contribute to the economy by providing care for dependants such as children and the elderly, though economists find it difficult to measure the monetary value of such work.

According to UNFPA, meeting the unmet need for contraceptive services in developing countries (about 200 million women in 2003) would avert 52 million unintended pregnancies annually and this would prevent the death of more than 1.5 million women. Clearly the loss of 1.5 million women will have an economic impact, not only through the loss of their productivity as workers and carers. There will also be longer-term economic implications of 505,000 children losing their mothers, in addition to the short-term costs to governments for the provision of social care.<sup>2</sup>

For example, orphans have a high risk of missing out on education. This increases levels of unemployment and poverty over the long term, because these orphans might be less employable. Therefore, in countries with a large number of orphans, the economy as a whole will suffer from reduced productivity.

Third, SRH services also have an impact on the economy through enabling *family planning*. These services enable people to plan their family and choose whether and/or when to have children. This enables them to make more optimal use of their income, for example by having more financial resources for the education of each child. Moreover, by enabling women to delay childbearing, these services can improve women's social and economic position, which will increase the productive capacity of the economy as a whole.<sup>3</sup>

### B3.3 Example: Economic impact of AIDS

Different economic models are used to estimate the impact of AIDS on the economy, combining economic theory with demographic and epidemiological projections.

**Econometric** models are models that apply mathematical and statistical techniques to economics for the analysis of problems and forecasting. These models are simplified representations of the way in which economic actors – such as consumers, producers, and government – interact with each other and react to changes in economic variables, such as an increase in interest rates. Models that incorporate AIDS will focus on the reaction of the economic actors in a particular country to increased mortality and morbidity due to AIDS.

The main channels through which ill health affects the economy are:

- ❖ At an *individual level*, AIDS causes stress and pain, exacerbated by the stigma attached to it. The reduction in life expectancy and the higher chance of illness will affect people's decision-making, for example about the need for savings and longer-term investments.
- ❖ At the *household level*, AIDS puts strain on other household members, who have to become family breadwinners when heads of households fall ill or die. AIDS also leads people to divert resources and time towards health care instead of other essentials. Especially worrying is the increased death rate among the carers and breadwinners relative to the dependents (elderly and young people). Orphaned children often suffer ill health and receive less education than other children. This can reduce the productivity of an

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<sup>2</sup> Data from UNFPA (2004). *Adding it up. The benefits of Investing in Sexual and Sexual and Reproductive Health Care*

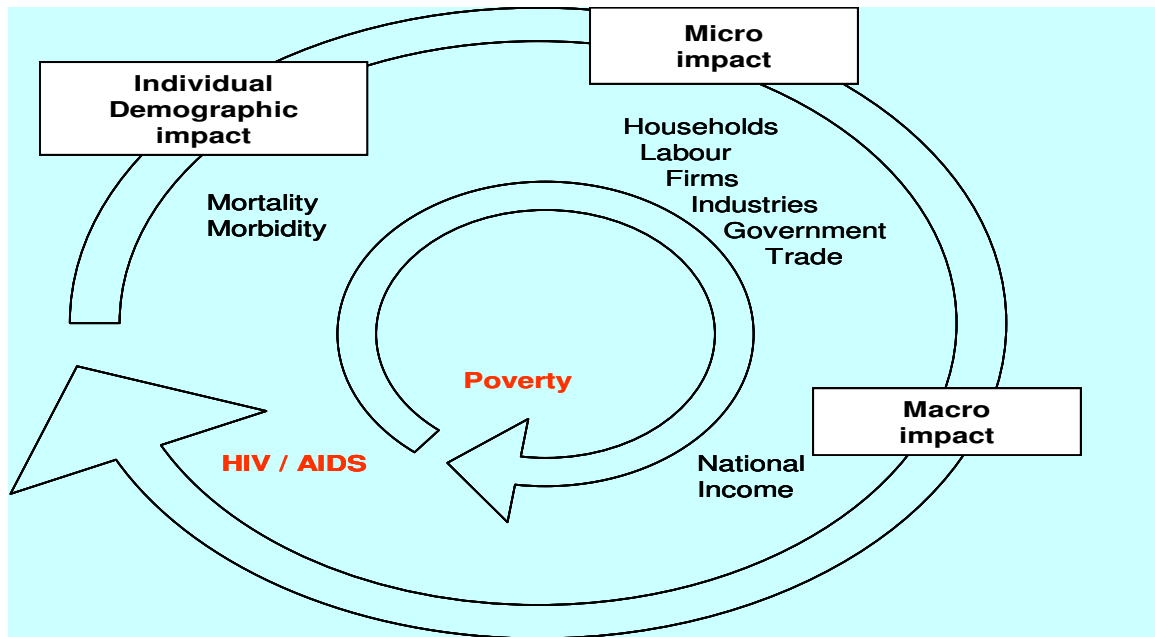
<sup>3</sup> UNFPA (2004). *Adding it up. The benefits of Investing in Sexual and Sexual and Reproductive Health Care*

economy in the future. As such, AIDS can lead to an increase in household poverty and subsequently to an increase in income inequality, depending on how affected households cope socially and economically.

- ❖ In *companies*, increased illness is generally expected to result in a reduction of labour productivity, in other words, the amount of work done per person will be less than without illness. Moreover, the availability and price of labour will change, because a reduced labour force and the loss of experienced employees will make the available people more expensive. This could affect the labour market, for example by limiting employment opportunities for certain skill groups but also potentially driving up wages for occupations where there is high demand.
- ❖ Certain industrial *sectors* – such as mining, agriculture, the health sector and financial services – can be more affected than others. This depends on the susceptibility of the employees to HIV. It will also depend on the vulnerability of the production process to the increased levels of HIV-related illness and death among both the workforce and the consumers of the products. These changes will have an impact on the long-term capacity of a country to produce goods and services.
- ❖ Apart from the effects of AIDS on the civil service workforce, *governments* will need to deal with increased demand for their services, not only in the health sector but also in other affected sectors, such as social welfare, education, trade and industry. Moreover, the AIDS epidemic could affect government revenue, for example when reduced economic activity leads to lower tax income. As such, given budget constraints, governments must make hard choices about how to handle the increasing costs and reduced income. Options are to reduce other expenditure ('crowding out' of non-AIDS expenditures), increase taxation or increase government debt, all of which will have a different impact on the economy.
- ❖ Furthermore, the economic impact of AIDS does not confine itself to a particular country, but will also have an impact on the *regional and international* environment. For example, in most cases, drugs will need to be imported from abroad. Also, the anticipation of the economic impact of AIDS could reduce foreign investment in an affected country.

As illustrated in figure B3.1, these impacts and the way in which the different actors react to them, will affect the total amount and value of goods and services produced in a country, now and in the future (GDP and GDP growth). Moreover, it clearly shows how dynamic the interaction is: while AIDS will have an impact on the economy, the changes this causes in the economy will also have an impact on the epidemic.

**Figure B3.1. Economic impact of AIDS**



By combining the economic impact of AIDS at all levels into one coherent model, economists can go beyond merely multiplying the number of the sick or dead with the lost income per person. And, the models are more than a simple addition of the impacts, as they also consider the way in which the economy responds. For example, an important determinant of the economic impact of AIDS is the way in which the increased AIDS-related expenditure is financed. For example, does the private sector compensate for the increased expenditure on health through a reduction in profits, an increase in consumer prices, lowering of net wages or a change in the production process (for example, replacing labour-intensive processes with capital investment in new machinery that employs fewer people)? Or do households finance the increased health care costs from savings, by reducing what they spend, or by reducing investments in education? All these choices could lead to different estimates of economic impact.

The results from the different models vary a lot. In any country, estimates of annual GDP growth rates range from very slight reductions to reductions as high as four percentage points. This means that *without* AIDS – or the associated increase in illness, the reduction in the population, and the economic costs – the potential annual growth of a country's national income could have been four percentage points higher on average over a 10 to 15 year period. However, even the smaller estimates, for example 0.5 percentage points per annum, will be significant as the impact accumulates over time. If a country grew at two percent per year for 30 years, it would increase its national income by about 80 per cent. However, if the economy only grew at 1.5 per cent, national income would only be 56 per cent higher after 30 years.

### B3.4 Potential problems with using economic models

Clearly, any of these estimations is subject to a lot of *uncertainty*. As discussed, one of the problems is that the economic impact of the AIDS epidemic on the macro economy is mostly indirect. It will depend on the coping strategies, adaptation and behavioural changes of everyone involved – from individuals to private sector companies and governments – which is difficult to fully capture. Even if the impact of AIDS on the total national income is in the lower range of the estimates, there might still be a significant economic impact in a particular sector, such as the mining industry, which has a particularly high HIV prevalence among its workforce, or in a

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particular population group, such as among the uninsured or poor people in rural areas.

Moreover, it takes *time* for the economic impact to filter through all the levels of an economy and to show an impact at macro level. However, econometric models are unable to make sensible estimates for more than 10 to 15 years. The potential impact of reduced human and social capital is, therefore, particularly difficult to capture in econometric models as it can, by its nature, only become evident in future generations, beyond the life-time of model projections.<sup>4</sup>

Moreover, the model outcomes are dependent on the *assumptions* modelers make about both the way in which AIDS feeds into the model and the way in which AIDS will change the behaviour of economic actors (for example, will households finance the extra costs through reduced consumption, reduced savings, or a combination of both?). These choices will affect the outcome of the model, but are not always explicitly mentioned, which leads to a confusing variety of estimates. The information on which such assumptions can be based is growing and becoming more robust.

Furthermore, macroeconomic indicators, such as income per capita or economic growth, are not complete *measurements of human welfare*. The impact of HIV and AIDS on other indicators, such as the human development index – a composite index combining data on health, education and economic status – would give a more accurate picture of the full impact. Moreover, especially in the case of SRH, any estimate of the impact that neglects to acknowledge the role that women play in the economy – often unregistered in official statistics as workers and carers – would severely underestimate the true economic impact of sexual and reproductive ill health.

### Summary

Measures of the economic impact of illness can in no way reflect human suffering. Nevertheless, analysis of the economic impact of SRH can be very useful for advocating the importance of SRH by illustrating the costs of not intervening. Moreover, when assessing the cost effectiveness of SRH interventions at a national level, the economic impact could be considered as well.

A lot of studies have focused on the impact at macroeconomic level, in other words, on national income. However, it is difficult to capture the complex way in which illness affects the economy. Therefore, it is helpful to look at the impact of illness at micro level, in other words, for specific groups of households, and particular sectors, including government. Such studies are also useful for clarifying the particular characteristics of a household, company or government department that make it particularly vulnerable to increased illness and mortality.

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<sup>4</sup> An attempt has been made by Clive Bell in Bell, Devarajan and Gersbach (2003). *The Long-run Economic Costs of AIDS: Theory and an Application to South Africa*, Policy Research Working Paper No. 3152, The World Bank, Washington, DC.