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Challenge	Opportunities	Ranking
Communicable diseases	Control of HIV/AIDS	1
Malnutrition and hunger	Reducing the prevalence of iron deficiency anaemia and iodine, Vitamin A and zinc deficiencies	2
Sanitation and access to clean water	Community managed low-cost water supply and sanitation	2
Malnutrition and hunger	Reducing the prevalence of LBW	3
Communicable diseases	Control of malaria	4
Sanitation and access to clean water	Research in water productivity in food production	5
Malnutrition and hunger	Investment in technology in developing country agriculture	5
Malnutrition and hunger	Improving infant and child nutrition and exclusive breastfeeding promotion	6
Sanitation and access to clean water	Small-scale water technology for livelihoods	6
Governance and corruption	Lowering the costs of starting a new business	7
Communicable diseases	Scaled-up basic health services	8
Subsidies and trade barriers	Trade liberalisation	9
Climate change	The Kyoto Protocol	10
Climate change	Optimal carbon tax	11
Climate change	Value at risk carbon tax	12
Migration	Guest worker policies (unskilled)	13
Migration	Active immigration policies (skilled)	14

BRUNO S. FREY

General Comments

Here only the four most important points relating to all the challenges will be discussed:

Inadequate Knowledge and Assumptions

The task to prioritise the ten challenges and the particular opportunities in each challenge is *daunting*. Reading the background chapters, the perspective papers and listening to the discussions, the dominant thought occurring was: 'How little do we know!' For many, if not most, of the issues the existing theoretical – but, in particular empirical – knowledge is quite inadequate. Moreover, there is often a large gap between the general discussion in the background chapters and

the BCRs the Experts panel is asked to indicate. But knowing little is in my view certainly no excuse for refusing to seriously attempt to establish the priorities envisaged in the Copenhagen Consensus. It is still far better to try to do the relatively best, than to do nothing – the problems addressed in the ten challenges are much too important.

The fact of inadequate knowledge should also remind us to be well aware of the assumptions which must necessarily be made. These often strongly affect the BCRs and, more generally, the prioritisation. It is also important to intensify efforts to improve our knowledge by research applied to these 'grand' issues rather than to the issues analysed in 'normal' research which are often devoted to the neat and tractable issues defined within the academic community itself. Economic education should also pay more importance to these 'grand'

problems. In particular, it should be possible to pursue an academic career if a scholar is prepared to tackle such issues, even if they do not lend to easy, well-defined approaches and solutions.

Institutions and Institutional Reform

The discussions of the ten challenges revealed the crucial importance of institutions and of institutional reform. Two aspects can be distinguished:

- (a) Several challenges can be met by undertaking *appropriate reforms of institutions*. This is most clearly visible in the case of governance and corruption (chapter 6). Improved public governance requires institutional changes, involving low direct economic costs but likely to yield very high economic and social benefits. They therefore should be undertaken. Such institutional reforms require little, if any, monetary outlays; in some cases the expenditure of money may even worsen the situation (thus, for example, it may increase, rather than lower, corruption). But many institutional changes are not costless in another sense. Effort must be expended to overcome *political opposition* to change. A major concern for dealing with the challenges is to devise strategies to successfully approach this task.
- (b) What institutional conditions are being assumed when the BCRs are discussed? In the vast majority of the opportunities the expenditure of money makes sense only when institutional conditions are reasonably well developed. In particular, political governance must be such as to allow funds to reach their targets, rather than being diverted to other tasks, or being stolen. In the latter case, the expenditure of public money leads only to waste and fruitless corruption.

Unequal Nature of Challenges

The challenges are of an unequal nature. Some of them address issues in the *utility function* of individuals such as hunger or diseases. Others refer to *mechanisms* which help to achieve worthy goals. The dampening of financial instability and the lowering of protection are thus of no value in

themselves but serve to raise GDP, which in turn raises individuals' well-being.

GDP Effects

Most studies measure the effects of the opportunities discussed in terms of GDP – i.e. consider only the productive side. In contrast, the utility side is neglected. This is most relevant for the challenges referring to hunger and diseases which are accompanied by great human suffering, or climate change and migration which involve many aspects affecting utility, but not productivity.

Individual Utility

The effects on individual utility can be captured by various methods such as contingent valuation surveys or hedonic pricing estimates. But these are confronted by major shortcomings. In particular, contingent valuation surveys tend to prompt the results implicit in the questions, while the hedonic pricing approach works only if the housing and labour markets are in perfect equilibrium – and this is most unlikely to be the case. The development of 'economic happiness research' (see Frey and Stutzer 2002) has offered an alternative way to consistently measure the effects of the opportunities on individual utility. Life satisfaction, subjective reported well-being (for short: happiness) can be measured in a satisfactory way by carefully designed surveys. A happiness function econometrically identifies the determinants, which can be ordered into personal, socio-demographic, economic and institutional-political factors. The effect of a particular factor, such as environmental quality or civil war, on happiness can then be identified. This approach has already been used in a few instances. One study (Luechinger, Stutzer and Frey 2004) has been able to measure the effect of civil war and terrorism on individual utility. The estimates suggest that the effect on life satisfaction is substantial. Thus, for example, the inhabitants of Paris would, on average, be equally well off with 14 per cent lower income if the level of terrorist activity is reduced to the level in the rest of France. The population of Northern Ireland would even be prepared to accept 40 per cent lower income if the civil war

activities were as low as in the rest of the UK. These estimates are only preliminary and should be taken only as indicative, but they suggest that in future research on world challenges this method can be used, provided that more data on individual life satisfaction than currently available will be produced.

Specific Comments

Malnutrition and Hunger (Chapter 7)

- 1 The chapter does not deal with *famine*, though it still is of considerable importance today.
- 2 Malnutrition and hunger do not only affect productive capacities reflected in GDP, but entail high suffering from *hunger*. The need to exploit the opportunities discussed increases as the benefits are higher than indicated in the estimates shown in the chapter.

Communicable Diseases (Chapter 2)

The discussion focuses on AIDS and malaria which are without doubt of major importance. But it would also be desirable to consider *internationally transferred diseases*. SARS caused only a few victims and was quickly controlled, but it may well be that this is less the case for (yet unknown) future diseases. It may well happen that, due to air travel, they are distributed all over the world within one or two days, with potentially catastrophic consequences. While little is known about this challenge, money should be extended to establish an effective way to control future international communicable diseases.

Governance and Corruption (Chapter 6)

This is a clear case in which *institutional reform* is required. Many attempts to reduce corruption have failed, partly because it is deeply entrenched in many developing countries. To raise transparency is therefore likely to have little effect, because the persons involved see little or no wrongdoing. Transparency may in fact even have counterproductive effects: when people are made aware of the extent of corruption elsewhere, they may well be induced to follow suit. There is an analogy to the compensation

of managers: when it was made transparent in the USA, it resulted in a further explosion of salaries because the lower-paid managers became aware of their situation and demanded equal treatment with the better-paid managers.

In view of the many failed attempts to curb corruption, I venture to advance a new approach. It relies on the idea that the rulers and public bureaucrats in developing countries must be given an incentive to effectively use the aid provided from outside. This can be achieved by officially giving them a certain percentage (say, 25 per cent) of the aid given for their own purposes, provided they effectively use the remaining percentage (say, 75 per cent). If they do not comply, they will in the future not receive any money at all, and will therefore lose their share (the 25 per cent). This scheme has two advantages:

- (a) Aid recipients have a strong incentive to use the money effectively
- (b) The share given to the disposition of aid recipients is not unethical.

Migration (Chapter 8)

Martin rightly stresses that migration increases GNP as the migrants move from low- to high-productivity occupations. But this beneficial outcome depends on a crucial assumption, namely that the migrants are *productively employed in their new country*. But this is often not the case; in the EU, with an unemployment rate of about 10 per cent, immigrants are often unemployed, but receive full social security benefits. To some extent, migration into EU countries is motivated by the fact that it is possible to receive public transfers without having to work. Under these circumstances, migration does not raise overall GDP but rather puts an additional strain on the social security system. Its financing requires higher taxes on persons in productive employment, or burdens the economy by higher public debts. In any case, the growth of the economy will be negatively affected.

Subsidies and Trade Barriers (Chapter 10)

The reduction of tariffs and subsidies is a major contribution to overall welfare. However, there are

costs associated with this beneficial move which should be taken into account. The level of tariffs and subsidies represents a *politico-economic equilibrium*; in particular, it reflects the power of organised interest groups. It would be naive to assume that this power disappears when the extent of protection against foreign competition is reduced. It just takes different forms: one is non-tariff restrictions (which are more difficult to observe and to

work against), the other is social legislation (especially in labour markets). Both reduce the static and dynamic efficiency of the economy. The question, then, is whether the distortions by trade restrictions or those in other areas are larger. In my view, the available evidence suggests that the reductions of tariff restrictions is strongly beneficial, even when induced distortions elsewhere are taken into account.

Ranking the Opportunities: Bruno S. Frey

Challenge	Opportunities	Ranking
Communicable diseases	Control of HIV/AIDS	1
Malnutrition and hunger	Reducing the prevalence of iron deficiency anaemia and iodine, Vitamin A and zinc deficiencies	2
Communicable diseases	Control of malaria	3
Subsidies and trade barriers	Trade liberalisation	4
Governance and corruption	Lowering the costs of starting a new business	5
Sanitation and access to clean water	Small scale water technology for livelihoods	6
Malnutrition and hunger	Investment in technology in developing country agriculture	7
Migration	Active immigration policies (skilled)	8
Sanitation and access to clean water	Re-use of wastewater for non-urban agriculture	9
Malnutrition and hunger	Improving infant and child nutrition and exclusive breastfeeding promotion	10
Communicable diseases	Scaled-up basic health services	11
Malnutrition and hunger	Reducing the prevalence of LBW	12
Climate change	Optimal carbon tax	13
Climate change	The Kyoto Protocol	14
Sanitation and access to clean water	Research in water productivity in food production	15
Migration	Guest worker policies (unskilled)	16
Climate change	Value at risk carbon tax	17

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