



COPENHAGEN CONSENSUS 2008 – RESULTS

The goal of Copenhagen Consensus 2008 was to set priorities among a series of proposals for confronting ten great global challenges.

These challenges are: Air pollution, Conflicts, Diseases, Education, Global Warming, Malnutrition and Hunger, Sanitation and Water, Subsidies and Trade Barriers, Terrorism, Women and Development.

A panel of economic experts, comprising eight of the world's most distinguished economists, was invited to consider these issues. The members were:

- **Jagdish Bhagwati**, Columbia University;
- **François Bourguignon**, Paris School of Economics and former World Bank chief economist;
- **Finn E. Kydland**, University of California, Santa Barbara (Nobel laureate);
- **Robert Mundell**, Columbia University in New York (Nobel laureate);
- **Douglass C North**, Washington University in St. Louis (Nobel laureate);
- **Thomas Schelling**, University of Maryland (Nobel laureate);
- **Vernon L Smith**, Chapman University (Nobel laureate);
- **Nancy Stokey**, University of Chicago.

The panel was asked to address the ten challenge areas and to answer the question, “What would be the best ways of advancing global welfare, and particularly the welfare of the developing countries, illustrated by supposing that an additional \$75 billion of resources were at their disposal over a four-year initial period?”

Ten challenge papers, commissioned from acknowledged authorities in each area of policy, set out more than 30 proposals for the panel's consideration. During this week's conference the panel examined these proposals in detail. Each paper was discussed at length with its principal author and with two other specialists who had been commissioned to write critical appraisals, and then the experts met in private session. Based on the costs and benefits of the solutions, the panel ranked the proposals, in descending order of desirability, as follows:



	SOLUTION	CHALLENGE
1	Micronutrient supplements for children (vitamin A and zinc)	Malnutrition
2	The Doha development agenda	Trade
3	Micronutrient fortification (iron and salt iodization)	Malnutrition
4	Expanded immunization coverage for children	Diseases
5	Biofortification	Malnutrition
6	Deworming and other nutrition programs at school	Malnutrition & Education
7	Lowering the price of schooling	Education
8	Increase and improve girls' schooling	Women
9	Community-based nutrition promotion	Malnutrition
10	Provide support for women's reproductive role	Women
11	Heart attack acute management	Diseases
12	Malaria prevention and treatment	Diseases
13	Tuberculosis case finding and treatment	Diseases
14	R&D in low-carbon energy technologies	Global Warming
15	Bio-sand filters for household water treatment	Water
16	Rural water supply	Water
17	Conditional cash transfers	Education
18	Peace-keeping in post-conflict situations	Conflicts
19	HIV combination prevention	Diseases
20	Total sanitation campaign	Water
21	Improving surgical capacity at district hospital level	Diseases
22	Microfinance	Women
23	Improved stove intervention	Air Pollution
24	Large, multipurpose dam in Africa	Water
25	Inspection and maintenance of diesel vehicles	Air Pollution
26	Low sulfur diesel for urban road vehicles	Air Pollution
27	Diesel vehicle particulate control technology	Air Pollution
28	Tobacco tax	Diseases
29	R&D and mitigation	Global Warming
30	Mitigation only	Global Warming

In ordering the proposals, the panel was guided predominantly by consideration of economic costs and benefits. The panel acknowledged the difficulties that cost-benefit analysis must overcome, both in principle and as a practical matter, but agreed that the cost-benefit approach was an indispensable organizing method. In setting priorities, the panel took account of the strengths and weaknesses of the specific cost-benefit appraisals under review, and gave weight both to the institutional preconditions for success and to the demands of ethical or humanitarian urgency. As a general matter, the panel noted that higher standards of governance and improvements in the institutions required to support development in the world's poor countries are of paramount importance.



For some of the proposals, the panel found that information was too sparse to allow a judgment to be made. These proposals, some of which may prove after further study to be valuable, were therefore excluded from the ranking.

Each expert assigned his or her own ranking to the proposals. The individual rankings, together with commentaries prepared by each expert, will be published in due course. (The challenge papers and other material have already been placed in the public domain.) The panel's ranking was calculated by taking the median of individual rankings. The panel jointly endorses the median ordering shown above as representing their agreed view.

Notes about the Challenges

Malnutrition and Hunger

The expert panel examined the following solutions to this challenge: micronutrient supplementation (Vitamin A and Zinc), micronutrient fortification (iron and salt iodization), biofortification (agricultural improvements through research and development), de-worming (which also improves education), and nutritional education campaigns.

The panel ranked solutions to this challenge very highly, because of the exceptionally high ratio of benefits to costs. Micronutrient supplements were the top-ranked and fortification was the third-ranked solution, with tremendously high benefits compared to costs.

Trade and Subsidies

In this area, the expert panel considered the following solutions: a high-quality outcome to the Doha international trade round; and increasing the rate of migration to boost the labor force in high-income countries. In the case of trade reform, lives are not directly and immediately at risk, and the biggest barrier is political, not financial. However, as a group, the expert panel concluded that a comprehensive conclusion to the Doha development agenda would yield such exceptionally large benefits, in relation to comparatively modest adjustment costs, that this solution was ranked second.

Diseases

Under this topic, the expert panel examined solutions to the challenge of both communicable and non-communicable disease. The solutions examined were: fighting tuberculosis through drugs and improved case identification; getting cheap drugs that treat acute heart disease to developing countries; combining a malaria prevention package (mosquito nets, DDT spray, etc) with subsidies on new treatments; expanding immunization and micronutrient coverage for children in developing nations; implementing tobacco taxes in developing nations; and a multiple-intervention approach to preventing and treating HIV/AIDS; making investments in hospitals.

Several disease solutions were ranked very highly by the expert panel, where the benefits significantly exceeded the costs. These options included expanded immunization coverage for children (ranked fourth); heart attack acute management (ranked 11th); malaria prevention and treatment (ranked 12th); tuberculosis case finding and treatment (ranked 13th).



Education

The research the experts considered focused on targeting children who had already attended some school and then dropped out. The solutions examined by the experts were: providing nutritional supplements or treatments for intestinal parasites to raise school attendance and increase physical and mental capacity; reducing the cost of schooling; conditional cash transfers (where parents are paid in exchange for sending their children to school regularly).

The first of these solutions was combined with a proposed solution from the Diseases challenge paper, because both largely dealt with de-worming and its benefits. This combined solution was ranked sixth. Lowering the price of schooling was ranked seventh, with an investment of \$5.4 billion yearly for an added three year of schooling covering in total 12.6 million elementary drop-outs.

Women and Development

Under this heading, the expert panel considered measures to increase and improve girls' schooling; providing support for women's reproductive role; microfinance to poor women borrowers; affirmative action. Measures to improve and increase girls' schooling through conditional cash transfers to mothers was ranked at number eight by the group, providing excellent benefits to costs.

Global Warming

The experts considered four solutions in this area: investing only in mitigation; investing in mitigation and research and development into low-carbon energy technology; investing only in research and development into low-carbon energy technology; investing in a combination of mitigation, research and development and adaptation. Mitigation only and a combination of mitigation and R&D were given the lowest two rankings by the expert panel, due to their very poor benefit/cost ratio. The option including adaptation was discarded, as the adaptation is essentially included in nearly every other option presented to the Copenhagen Consensus. An investment into research and development in low-carbon energy technologies was ranked 14th by the expert panel.

Sanitation and Water

Under this heading, the experts considered interventions that would improve access to clean drinking water and/or sanitation. The solutions they considered were: setting up a rural water supply program providing poor communities in Africa with deep boreholes and public hand pumps; developing campaigns that raise awareness of disease transmission, health costs, and the social benefits of sanitation; ensuring affected communities have access to technology to remove contaminants in raw water supplies; building reservoirs in some parts of Africa, such as the sparsely inhabited Blue Nile gorge in Ethiopia. The expert panel considered that bio-sand filters and the rural water supply program offered some promising benefits as intermediate solutions to this problem.

Conflict

The main focus of the research that the experts examined is on reducing the risk of conflict re-emerging in a country after civil war. It used the provision of aid as a benchmark solution, and then suggested the following: linking aid to limits on military spending; sending significant military



forces into nations emerging from conflict to reduce the risk of a relapse into violence; providing (and having the ability to back up) a promise that a military force will intervene when a democratically elected government is threatened by violence. The expert panel found that peace-keeping forces in post-conflict situations could provide fair benefits for the cost.

Air Pollution

The experts examined research exploring solutions to both indoor and outdoor air pollution. The solutions considered were: Providing a chimneyless rocket stove to those using unhealthy, old-fashioned stoves; switching to low and ultra-low sulfur vehicle fuels (diesel and gasoline) for urban vehicles; retrofitting diesel-fuelled buses and delivery trucks with filters that reduce urban pollution and its health effects; introducing exhaust emission limits for diesel vehicles and checking tailpipe emissions in a bid to curb pollution. The solution to indoor pollution was ranked at 23, higher than the outdoor air pollution solutions, whose very high costs outweighed the benefits in a developing nation context.

Terrorism

The panel chose not to include any of the proposed solutions to the challenge of terrorism in the overall ranking. Though the paper presented innovative and new work on the economic costs and benefit of terror prevention, the panel found that there was not sufficient evidence regarding the proposed options.



How to spend \$75 billion over four years

When the budgetary constraints of the Copenhagen Consensus framework are applied to the expert panel's prioritized list, money can be allocated to thirteen of the solutions. The yearly budget is \$18.75 billion (4 years x \$18.75b = \$75 b), and provides for a broad range of investments.

	Solution	Yearly cost in million USD
1	Micronutrient supplements for children (vitamin A and zinc)	60
2	The Doha development agenda	0
3	Micronutrient fortification (iron and salt iodization)	286
4	Expanded immunization coverage for children	1,000
5	Biofortification	60
6	Deworming and other nutrition programs at school	27
7	Lowering the price of schooling	5,400
8	Increase and improve girls' schooling	6,000
9	Community-based nutrition promotion	798
10	Provide support for women's reproductive role	4,000
11	Heart attack acute management	200
12	Malaria prevention and treatment	500
13	Tuberculosis case finding and treatment	419
	Total	18,750

Note: All costs are based on the Challenge Paper authors' estimates. In the case of Solution 13 (tuberculosis case finding and treatment), the author estimates the total costs of the intervention to be \$1 billion. However, owing to the annual budgetary restriction of \$18.75 billion, only \$419 million can be allocated.