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Contents

4	1. Introduction
6	2. Some of the early work in UNU-WIDER
8	3. Newer challenges
10	4. Need for a wider analysis of externalities
14	5. A concluding remark



Foreword

UNU-WIDER was founded in 1985, and over the course of the past three decades much has changed in development. In 2015, our 30th anniversary year, we took the opportunity as an institute, and as a network, to look at the past as a guide to the future of development economics and our work. Professor Amartya Sen was instrumental in the founding of UNU-WIDER, and has been a leading international economist and philosopher for the duration of the institute's existence. We were therefore most grateful to him for accepting our invitation to give the 2015 WIDER Annual Lecture 19 on the topic, 'Development research and changing priorities', on 19 September 2015 in Helsinki.

Each year UNU-WIDER invites an eminent scholar or policy maker to speak – someone who has made a significant contribution in the field of development. None fits that description better than Amartya Sen. Sen is Thomas W. Lamont University Professor and Professor of Economics and Philosophy at Harvard University, and was Master of Trinity College, Cambridge, until 2004. He is a Nobel Laureate economist whose work has contributed to the academic disciplines of economics, philosophy and the social sciences more broadly.

Professor Sen has done important work on social choice theory, welfare economics, theories of justice, and the demands of rationality, as well as on the causes of famine – which led to the development of practical solutions for the relief of famine and its prevention. In 1998 he was awarded the Nobel Prize in Economic Sciences for his contributions to welfare economics and social choice theory.

Professor Sen's focus on the new threat of climate change in his WIDER lecture is fitting for us as an institute. Climate change is at the core of UNU-WIDER's 2014-18 work programme on 'Transformation, Inclusion and Sustainability' – alongside the perennial issues of hunger, poverty, and gender inequality highlighted by Sen. His lecture draws attention to the fact that these issues are indelibly interlinked. Making it easier to produce energy with less environmental impact would be a contribution to environmental planning. It would also help to make it possible for a great many people in developing countries to lead fuller and freer lives. Sen's insistence that environmental thinking has to be multi-directional – rather than single-focused – should inform all our work going forward. As Sen highlights, the new challenge of climate change demands the kind of widening of research that bears comparison with the challenges that have occupied UNU-WIDER throughout its three decades of existence.

Professor Sen's lecture is a timely and crucial response from a leading global figure who has built a wealth of experience on the subject. I would like to offer my sincerest thanks to Professor Sen for taking on this challenging issue. I have no doubt that the words of such an eminent proponent of sustainable development will stir the policy makers, researchers, development practitioners, and members of the public whom we aim to reach out to.

**Finn Tarp, Director
UNU-WIDER, Helsinki**



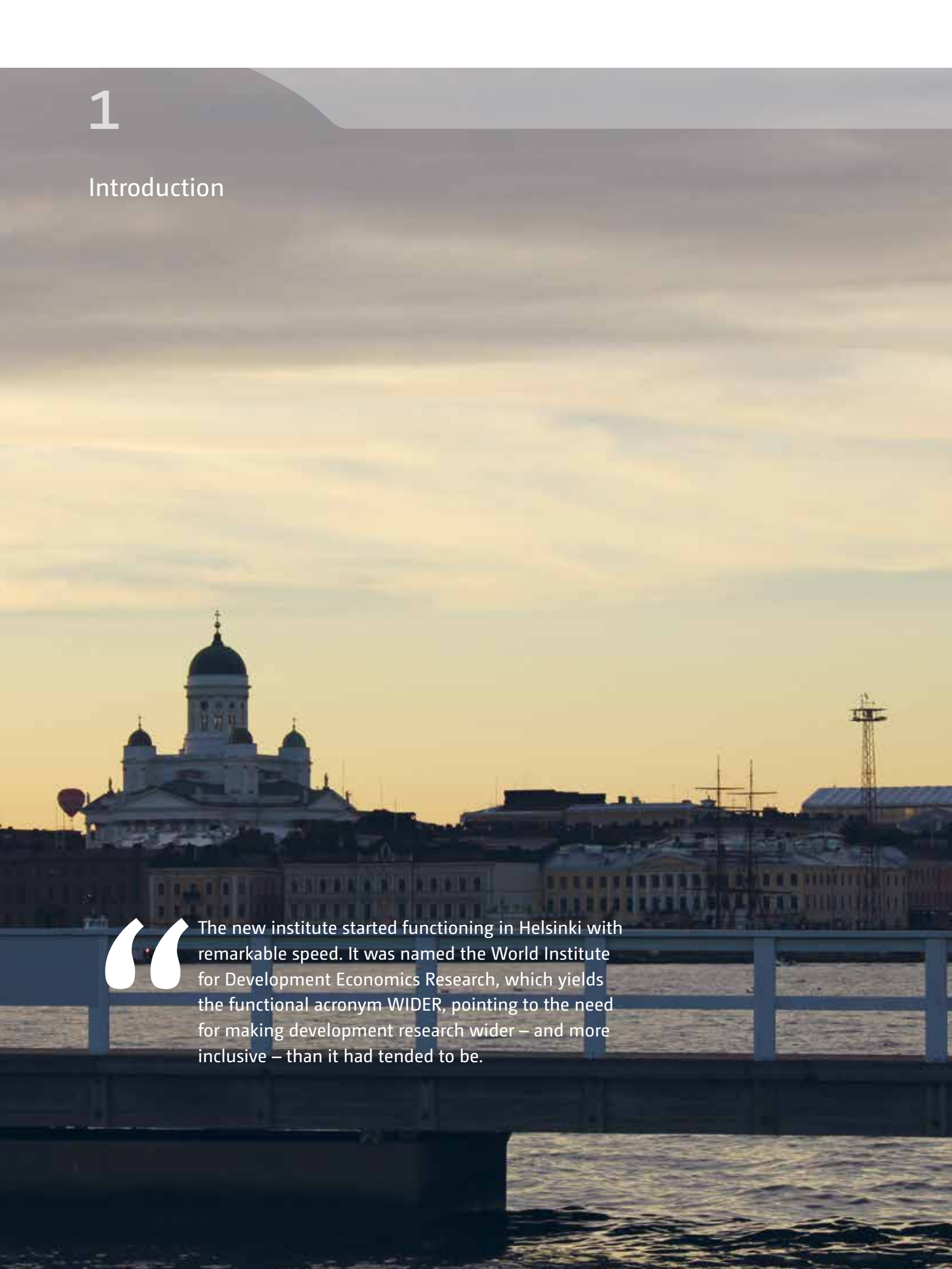
About the author

Amartya Sen is a Nobel Laureate economist who has made deep and lasting contributions to the academic disciplines of economics, philosophy, and more broadly, the social sciences. Sen has worked over the years on social choice theory, welfare economics; and theory of justice. He is also much known for his work on the causes of famine, which has led to the development of practical solutions for the relief of famine and its prevention.

Sen is Thomas W. Lamont University Professor and Professor of Economics and Philosophy at Harvard University, and was Master of Trinity College, Cambridge, until 2004. Professor Sen has served as the President of the Econometric Society, the American Economic Association, the Indian Economic Association, and the International Economic Association. In 1998 he was awarded the Nobel Prize in Economic Sciences for his contributions to welfare economics and social choice theory.

1

Introduction



“ The new institute started functioning in Helsinki with remarkable speed. It was named the World Institute for Development Economics Research, which yields the functional acronym WIDER, pointing to the need for making development research wider – and more inclusive – than it had tended to be.



It was a little over thirty years ago that Alex Kwapong, the former Vice Chancellor of the University of Ghana, and I were going from place to place and country to country to assess, along with a team from the United Nations University (UNU) (of which Kwapong was Vice-Rector), the suitability of the alternative locations that had been suggested for situating the new research institute that the UNU was about to establish. Helsinki emerged as an excellent choice, not just because Finland was offering generously to host the institute (there were excellent offers also from elsewhere, including the Netherlands), but also because Helsinki is such an attractive, elegant, and work-friendly place in which to base the institute. We talked with some Finnish academics, some government administrators, and a few ministers, listened to some great music, and walked in awe in Helsinki's historic centre. At the end of it, when Alex and I sat down to chat about our decision, he said, 'So, it is going to be Helsinki, right? Shall I draft a letter on behalf of both of us to the Rector?' We were indeed in agreement, as was the team of UNU's leading administrators who had come with Kwapong and me.

The new institute started functioning in Helsinki with remarkable speed. It was named the World Institute for Development Economics Research, which yields the functional acronym WIDER, pointing to the need for making development research wider – and more inclusive – than it had tended to be. Since I had a role in choosing the name, I was relieved that the pairing of the name and the acronym seemed to have stood the test of time, working in a reasonably informative way.

When UNU-WIDER was formally established, I could not for a while join it, because of a huge personal tragedy in my life. My wife, Eva Colorni, suddenly fell ill with cancer and after a short but valiant fight, she lost the battle. By the time, in a state of depression and dejection, I joined UNU-WIDER with two small children accompanying me (who instantly loved Helsinki), the institute was already beginning to work in top gear, under the insightful direction of Lal Jayawardena, the first Director of UNU-WIDER. The high tempo of UNU-WIDER's work, and its boundless optimism, helped me to get away from my personal tragedy and re-orient myself to join the battle against hunger and poverty in the world. Things were happening fast, and arrangements for new and innovative research moved rapidly ahead.

2

Some of the early work in UNU-WIDER



So what was UNU-WIDER doing in those early days? Right from its initiation, UNU-WIDER, led by the first Director, Lal Jayawardena, undertook really broad-based research – what was described, with some justified pride, as ‘research for action’. The work was not confined to economics in a narrowly defined sense, and the interaction of economics with anthropology, sociology, politics, and history enriched the academic explorations that were pursued in UNU-WIDER (living up to its name). Frédérique Appfel and Stephen Marglin were concerned, among other subjects, with the interface of economics and culture, including diverse manifestations of social features in the relations within and between communities. There were works on a large variety of subjects, varying from global finance to comparative civilization. There were other development problems that were also receiving attention in the young institution, for example work on gender equity, and on the growing recognition of the influence of global relations on national and regional economies.

Let me comment a little on the research into hunger and poverty in those early days of UNU-WIDER, with which I was directly involved. There was plenty to investigate about different aspects of hunger and its far-reaching consequences, including the role of nutritional inadequacy in the deprivation of human lives and in the handicapping of economic and social relations of families and nations. Siddiqur Osmani from Bangladesh, who was the resident director of the hunger project, played a leading part in the research that UNU-WIDER did on various aspects of this critically important subject. Another former student of mine, Nanak Kakwani, also joined us, and so did many internationally active scholars. Soon the team was further strengthened by the joining of Jean Drèze who became a life-long collaborator of mine, with whom I have a wonderfully settled division of labour, so that he does 90 per cent of the work and I get 90 per cent of the credit.

We wondered why there was so much hunger around the globe. The contemporary world is enormously richer, in terms of averages and total incomes and wealth, than it used to be. Indeed, vast numbers of people on earth enjoy living standards today that our ancestors would have found difficult even to imagine. Why has this global opulence not solved the problems of hunger and undernourishment? In answering the question, we had to go into the nature and far-reaching impact of economic inequality, and also into the way people’s entitlement to food – what food they can get and use – gets determined and makes the relation between food production and food entitlement often quite distant.

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I had written something on this subject, which initially had a rough ride, in the decade preceding the birth of UNU-WIDER. The Director of the Food and Agriculture Organization (FAO) had initially described in a BBC exchange with me that my book on poverty and famines was the worst book he had read in his life, and when I had asked him, ‘You mean on this subject?’ he said, ‘No, this is the worst book I have read in my life on any subject’. I thought that was quite a distinguished position to occupy in the assessment of one of the leading public policy institutions in the world, but by the time UNU-WIDER got started, a shift from the perspective of food availability to one of food entitlement was beginning to get some traction. And the work at UNU-WIDER made it possible to see the vast ramifications of an alternative approach, aided particularly by the research of Jean Drèze and Siddiq Osmani.

There was also a different kind of concern that emerged as being really important – the distribution of food within the family – between men and women, and between adults and children. Not every member of the family earns an income – infants do not, very old people may not, and in many societies, women typically do very hard work at home, but they were not seen as ‘bread earners’ – bringing in income from outside, in the market economy. Of course the market-based earners in the family would not have been able to do their outside work and earn an income if they had to look after household work as well (including taking care of children and of the old and the sick). In fact, household work is an essential ingredient of the process of earning an outside income. While that diagnosis is easy to understand, the social conventions in most countries of the world have tended to discriminate in favour of the so-called bread earners and against those – typically women – whose household work makes bread earning possible. So gender inequality had to be included in the causal explanation of poverty and hunger. Entitlement analysis had to be, thus, extended to go beyond legal entitlements related to ownership, and to cover also such issues as the use of social norms and established conventions of sharing, which may determine who is accepted as having ‘entitlement’ to what.

The work at UNU-WIDER also attempted to go beyond entitlements of people to the resulting capabilities people manage to acquire as a result of economic and social opportunities, in addition to their personal conditions (such as disability or proneness to illness) and aspects of the social environment (such as the epidemiological circumstances). This was also a work I had started even before UNU-WIDER came into existence (it was explored particularly in a book of mine called *Commodities and Capabilities* published in 1984 – the year before UNU-WIDER was established), but the ideas to pursue received huge help from teamwork at UNU-WIDER in those early years. Martha Nussbaum joined in this work in the late 1980s and vastly enriched the capability-based perspective. Poverty, it was increasingly becoming clear, was not just the lowness of income, but the deprivation of human capability.



3

Newer challenges



The classic issues of hunger, poverty, gender inequality, and other deprivations remain relevant even today, and there is no scope for declaring victory in any of these battles. And yet newer challenges have also emerged and our understanding of deprivation has been undergoing very considerable change. There are many new challenges that we have to consider, and one of the most important among them is the problem of environmental sustainability.



Environmental analysis is seriously hampered by not having anything like an adequately broad normative framework, involving ethics as well as science that could serve as the basis of debates and discussions on policy recommendations.

Our global environment has many problems. If the high volume of carbon emissions is one, the low level of intellectual engagement with some of the major environmental challenges is surely another. There are, of course, many engaging and well-researched studies of particular environmental problems such as global warming, and we have good reason to be appreciative of that. And yet some of the foundational issues have remained unresolved – indeed unaddressed. I shall devote the rest of the time I have to pointing to some neglected areas of research for action.

Environmental analysis is seriously hampered by not having anything like an adequately broad normative framework, involving ethics as well as science that could serve as the basis of debates and discussions on policy recommendations. Despite the ubiquity and reach of the environmental dangers, a general normative framework for the evaluation of these dangers has yet to evolve. While there has been much concern with reducing emissions and cutting down the use of fossil fuel (good objectives in themselves), there is an absence of a broad enough framework for assessing the comparative costs of different sources of energy (from fossil fuel and nuclear power to solar and renewable energy), inclusive of the externalities involved, which can take many different forms, that the market costs do not capture. One of the externalities – the evil effects of carbon emissions – has certainly received enormous airing (and that, in its context, is a very good thing), and yet there are other externalities that also demand our urgent attention.

This includes the growing danger from the rapidly increasing use of nuclear energy, for example in China and India (where the use of nuclear energy is gathering momentum and large expansions are being planned), and also elsewhere. And yet the dangers and externalities of nuclear energy have received astonishingly little

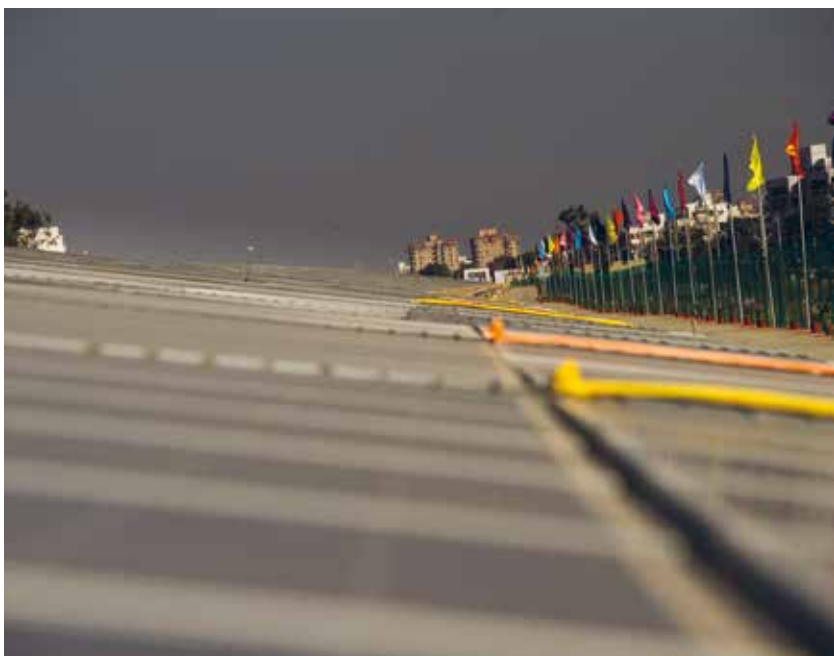
systematic attention in scientific and policy discussions. Environmental thinking has to be multi-directional rather than single-focused, even if the focus is something as important as the dangers from carbon emissions, and this has to be a new application of the approach of widening the domain of research in the way UNU-WIDER has been doing since 1985.

I would like to talk briefly about some persistent biases in thinking about benefits and penalties of energy use in different forms in the contemporary world. First, the recent focus on energy thinking has concentrated particularly on the ways and means of reducing carbon emissions and, linked with that, cutting down energy use, rather than taking energy use as essential for conquering poverty and seeing the environmental challenge within a more comprehensive understanding. There would appear to be an insufficient recognition in global discussion of the need for increased power use in the poorer countries. For example, in India a third of the people do not have any power connection at all. Making it easier to produce energy with better environmental correlates may, thus, be a contribution not just to environmental planning, but also to making it possible for a great many people to lead a fuller and freer life.

Second, there is insufficient recognition of an empirical fact that may, at first glance, look rather trivial, but which has much greater importance than may be immediately recognized. Many areas of the world where poverty is common are also particularly sunny and offer hugely underappreciated opportunities for the generation and use of solar power, if the scientific and engineering problems of using this source of energy – including the development of cheaper storage of seasonally variable power – are adequately addressed. The availability of a strong sun, of which Bangladesh, India, and much of Africa get incomparably more than does Europe (which is currently the centre of environmental activism in the world – much to its credit, in other ways), makes it possible for many of the poorer areas of the world to utilize an enormous supply of energy, if environmentally sound ways of harnessing, storing, and utilizing solar energy can be developed. This could benefit some countries with very limited availability of known stocks of fossil fuel (such as large parts of sub-Saharan Africa), as well as other countries where some fossil fuel sources are abundant (such as coal in India), but the use of which has to be restricted because of their impact on climate change.

Third, with growing recognition of the dangers of global pollution from fossil fuel, the attractions of nuclear power have been quite strong in recent years. The attraction applies inter alia to the scientific community, but it seems to have a strong hold on global policy makers as well. For example, in its presentation of data on 'clean energy', the World Bank lumps together nuclear with solar and other renewable sources of energy: 'Clean energy is noncarbohydrate energy that does not produce carbon dioxide when generated. It includes hydropower and nuclear, geothermal, and solar power, among others'.¹ Is nuclear energy really clean? I would suggest that this is an absurd diagnosis

The climatic implications of reliance on nuclear energy are indeed enormously better than the continued – and accelerating – use of fossil fuel. However, threats from externalities do not come only through climate change. Nuclear power also has extremely strong negative 'externalities' of very different kinds. There are penalties and perils which are not included in the evaluation at market prices of the costs of nuclear power, thereby making that alternative appear to be much cheaper than it actually is from a fuller social point of view.




¹ See <http://data.worldbank.org/indicator/EG.USE.COMM.CL.ZS>, of the World Bank.

4

Need for a wider analysis of externalities





Need for a wider analysis of externalities Energy evaluation as a part of environmental planning demands much more extensive and probing accounting of costs-taking note of externalities of different sources of energy. For example, there are at least five different kinds of externalities that add significantly to the social costs of nuclear power:

- 1** possibly huge effects of nuclear accidents (as in Chernobyl or Fukushima);
- 2** risks of sabotage (a strong possibility in countries like India);
- 3** consequences of possible nuclear theft (a potential everywhere, but particularly strong in less well-guarded plants);
- 4** difficulties in safely disposing of nuclear waste (which will grow over time cumulatively and possibly quite fast if the world comes to rely more and more on nuclear power); and
- 5** nuclear reactions that may be set off if and when a nuclear power plant is bombed or blasted with conventional weapons in a conventional war, or even in a rather limited local skirmish.

Each of these carries possibilities of huge adversities both to human life and to ecosystems around us. Even with tiny probabilities of each, given the growing number of nuclear enterprises, we tend to get very sizable overall probabilities. Estimates of probable harm (from terrible to catastrophic) could be gigantic. Nuclear power is, in any case, quite expensive even in conventional terms, and if, in addition, the expected disvalue (or 'disutility') of externalities is added to the costs of power production, the sum-total would begin to move up very substantially.



It is unlikely that in the near future fossil fuel use can be eliminated by nuclear power, though the picture could change in the long run. But the dangers of nuclear accident, sabotage, or theft can become very large even before nuclear power comes anywhere near replacing coal, oil, and other fossil fuels across the world. Furthermore, to the extent that more safeguards are put into the basic design of nuclear power production and supply, the costs of nuclear energy will also become significantly larger even in conventional terms. An alternative that seemed very small in possible use only a few years ago, but which is coming into more and more serious consideration now, is renewable power through using solar energy, wind power, and the power of waves. Recently the costs of these renewable sources of energy, particularly solar, have been falling very fast – quite a bit faster than was expected. There are many other issues to be faced in coming to rely more on renewable energy, including the costs of storage to integrate the time pattern of energy use with the time pattern of energy production dependent on natural circumstances, such as seasonal as well as daily variations of sunny times. The scientific possibility of cutting down storage costs requires much more investigation – and much greater public support for scientific and engineering research.

It is not my contention that these problems are easy to investigate and ascertain. There are empirical gaps in our knowledge as well as analytical difficulties in dealing with the evaluation of uncertainty. But that problem is present in the analysis of global warming as well, and the recent works on estimating global dangers from emissions from fossil fuels have moved inescapably in the direction of including uncertainty-inclusive epistemic evaluation (the problem of the so-called ‘fat tail’ in the probability distribution of dangers from global warming is a good example). The comparison between the two sources – 1) nuclear power and 2) renewable

power from sun, wind, and wave – requires urgent evaluation, with special attention to their respective consequences on human lives and well-being, as well as concerns about ecosystems. The need to go beyond unidirectional thinking about the environment is extremely strong right now.

We need the same kind of widening of the research agenda as was demanded by the challenge of hunger and poverty, in which this institution, UNU-WIDER, has played such a leading part for three decades. There is a strong need for radically broadening the priorities of environmental planning and of energy-related scientific research in view of these empirical and evaluative concerns.

“

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Even as I turn now to examine the ingredients of a broadly normative framework for environmental evaluation, we need to pay particular attention to these specific issues, both for their immediate importance and for their relevance for normative evaluation in an inclusive framework.

A normative framework for environmental evaluation would have many demands. Among other requirements, it must have both evaluative soundness and the possibility of informed application and reasoned public use. The issues that have to be considered in developing an applicable normative framework must include:

- 1
politics and public reasoning;
- 2
science and epistemology; and
- 3
ethics and morality.

I would have liked to have gone into these specific demands more fully in this talk, but my time is up, and I can only hope that during the discussion following my presentation, which I have been promised, we can discuss these distinct challenges a bit more.

The politics and public reasoning about our environmental threats involve perhaps the most difficult set of problems to be addressed. Even though scientific evidence of the fragility of the environment has been growing, the politics of environmental understanding has often been running defiantly against accepting the scientific readings, particularly in the United States of America, and it seems to have become largely locked in inter-party disputes between the Republicans and the Democrats. There has been a serious failure in communicating the results of scientific analysis and in involving the general public in informed, ethical reasoning, especially in America.

America is not the whole world, but public understanding and policy-making in the USA are important both because it is such a big polluter, and also because the willingness of other countries to make sacrifices today would be hard to arrange if Americans go on polluting the environment with little attempt to restrain. There has been a lot of research into climatic studies over recent years, and the science of our vulnerability to global warming and other changes associated with massive, continuing, and typically increasing emissions is as clear today as scientific prognostication ever can be.

If this is a field where the primary challenge may be seen as communication rather than basic science, that is not so in considering threats to the environment coming from other directions. The epistemic aspects of making extensive use of nuclear power as a substitute for fossil fuel has barely started. There is a huge necessity to probe research into the rational assessment of externality-inclusive costs of energy production and use.



5

A concluding remark



end by pointing to the need for moving from unidirectional priority to coming to terms with the multifaceted threats that the environmental dangers pose. It is, for example, odd that the negative externalities of nuclear energy have figured much more in public fear than in scientific attempts to provide an estimate of the ranges of values within which the negative externalities of nuclear energy can be placed. If there is a need for more politics and public reasoning (including on global warming, based on scientific evidence), there is also a strong need for more scientific and epistemic research into the many different types of environmental threats we face, including the likely results of increasing nuclear use across the world. This will take us well beyond global warming.

This new challenge demands the kind of widening of research that bears comparison with the old challenges that have occupied UNU-WIDER in the past, going back all the way to the initial years. The nature of the adversities the world faces may have changed, but the need for widening our 'research for action' remains similar to what it was thirty years ago. We do, however, know from the history of practical research, including the accomplishments of UNU-WIDER, that we can make a difference to the world by directly addressing the hard problems we face. The present leaders of UNU-WIDER seem very well engaged in this work.

I cannot hide the fact that I am tremendously encouraged by the quality and dedication of the young researchers who have come to this global conference – and for once Africa is not under-represented. I have greatly benefited in my own understanding of development from my conversations with the participants. Problems are solved mainly by paying intelligent attention to them. The new challenges that the world faces are certainly large, but it seems to me that UNU-WIDER and its associates are more than ready to take them on.

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