IPI Blue Papers

Underdevelopment, Resource Scarcity, and Environmental Degradation

Task Forces on
Strengthening Multilateral
Security Capacity

No. 1

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Foreword

We live in difficult times. Rapid socioeconomic changes, demographic bulges, and intertwined security crises are affecting us all, and most especially the poor. Criminal and violent organizations are gaining control over territory, markets, and populations around the world, complicating peacemaking and generating insecurity. States with ineffective and corrupt institutions prove too weak to deal with interlinked threats ranging from transnational organized crime to infectious disease. Meanwhile, the number of actual and aspirant nuclear-armed countries is growing, as is the likelihood that nonstate actors will acquire weapons of mass destruction through illicit global trade.

Global warming and environmental degradation particularly distress already impoverished regions. Fluctuating food and energy prices put people and governments to the test, while the demand for resources—notably water and energy—increases due to unprecedented development and population growth.

To this already gloomy picture, the year 2008 added tectonic shifts in the economic landscape. A devastating financial crisis is producing dramatic consequences with likely long-term impacts on economic development, aid, and emerging markets alike.

Yet, at a time when common efforts are needed more than ever, division and discord can be spotted in many multilateral institutions, from the United Nations to NATO and the European Union. Peace operations are under serious stress, while political disunity undermines the authority and effectiveness of the Security Council. The optimistic embrace of a "flat" world of responsible sovereign states is challenged by those who push for a return to exclusive state sovereignty and jealously guarded territorial integrity.

However, crises provide unparalleled opportunities for change. These moments are transitory, but they need to be seized upon to

put ideas into action, to strengthen the capacity to meet the challenges we face, which in today's globalizing world means more responsive, effective, and efficient multilateral mechanisms and policies.

In response to these challenges, IPI launched the **Task Forces on Strengthening Multilateral Security Capacity** in 2008. The purpose of these Task Forces was to suggest ideas for action to strengthen the capacity of the United Nations (UN) and its partners to deal effectively with emerging, multifaceted, and global challenges to peace and security. The Task Forces addressed not only the policy steps that are needed, but also the political and institutional strategies required to implement them. This strategic perspective has too often been the missing link in efforts to strengthen the UN system.

Given the links among security, development, and environmental challenges, the initiative opened with a symposium on Development, Resources, and Environment. The symposium provided a larger context for the work of the subsequent Task Forces, which focused on two core dimensions of the security concerns facing the UN and its partners: (1) Transnational Security Challenges and (2) Inter- and Intra-state Armed Conflict (see Annex 3 for details of the process).

The **IPI Blue Papers** are the product of this intense process of consultation, which engaged more than sixty UN member states, half of them at ambassadorial level, and seventy experts in a variety of thematic areas. It included the preparation of more than twenty-five background papers and fourteen multiday meetings. Each Blue Paper includes a section on why action to strengthen capacity in a particular area is needed and a section with ideas for action. The content is based on the Task Force discussions, but does not necessarily represent all the views articulated during the entire process. Although the institutional focus of the Task Forces was primarily the UN, this report aims to assist key stakeholders to prioritize and leverage the comparative advantages of the UN

and other multilateral institutions, including their ability to forge productive and sustainable partnerships with other groups and organizations.

While policy discussions on related topics are taking place in other fora, IPI brings to this initiative nearly forty years of constructive collaboration with the United Nations and its membership, as well as a more long-term strategic perspective than in-house and intergovernmental processes can offer. With these Blue Papers, IPI hopes to continue a process that will produce concrete steps toward stronger multilateral capacity in peace and security.

Despite the difficulties ahead, we believe that tomorrow's world needs more multilateral capacity, not less. It needs a stronger UN, capable of adapting and strengthening its capacity to address the realities of the twenty-first century. It needs a UN able to work with its partners and in particular with member states, which remain the first line of response to many of the threats discussed here.

This is the purpose of the IPI Blue Papers, and I am very pleased to introduce them to you.

Finally, I would like to thank most warmly the co-chairs of the Task Forces, the member-state participants, the experts, and IPI staff, without whose hard work and intellectual contributions the IPI Blue Papers would not have seen the light of day.

Terje Rød-Larsen
President, *International Peace Institute*
January 2009

Acronyms

BCG	Bacille Calmette Guerin (vaccination against tuberculosis)
BRIC	Brazil, Russia, India, and China
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
DTP3	combined vaccine for diphtheria, pertussis, and tetanus
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
GDP	gross domestic product
GHGs	greenhouse gases
HIV/AIDs	human immunodeficiency virus/acquired immunodeficiency syndrome
IEA	International Energy Agency
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
MDGs	Millennium Development Goals
ppm	parts per million
TB	tuberculosis
UN	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund

Executive Summary

Underdevelopment, resource scarcity, and environmental degradation are cardinal, even existential, threats to human security. These challenges not only threaten human life and well-being, but also impact the global geopolitical and economic landscape. Chronic underdevelopment condemns more than 1 billion people to lives of poverty, illness, and poor political and economic prospects. Long-term goals of economic and human development are undermined by scarce, unreliable, or unaffordable supplies of vital resources such as food, water, and energy. Climate change threatens to exacerbate the effects of environmental degradation, putting land and livelihoods at grave risk.

These challenges are deeply interconnected and global in scope; for developing countries, they can be fatal burdens. Poverty, hunger, and disease feed off each other, plaguing huge numbers of people, while water scarcity and desertification threaten to set back major improvements in development. As rapid population growth strains already scarce natural resources, increasing urbanization puts additional pressure on infrastructures that are already weak. Meanwhile, the looming effects of climate change threaten large populations in vulnerable geographic areas, where natural disasters and environmental damage are likely to disproportionately affect the world's poor.

These challenges affect the very physical environment in which the world's most vulnerable populations struggle to subsist. Moreover, the recent global financial and economic crisis has exacerbated developmental and environmental problems. The effects of the crisis are global in scope, posing a great threat to the developing world. Slow global economic growth and reduced trade volumes, combined with a decrease in remittances and net private investments, will have devastating effects in places

like Africa, where millions more people risk being driven into poverty.

These human security challenges are inextricably linked to existing threats to international security. Climate-induced disasters could lead to massive migrations, heightening intraregional tensions. Resource scarcities and inequalities in distribution can increase the risk of conflict, while conflict itself exacerbates poverty. Underdevelopment is also closely linked to weak governance, making development challenges harder to overcome. In certain cases, gaps in governance can create "hot spots" of instability where illicit activities thrive, sometimes within networks that are transnational. In these areas, urban youth without viable economic and political alternatives are particularly susceptible to participation in gang activity and rebel and terrorist groups, while poor farmers with access to criminal networks may turn to illicit production and trade, such as narcotics, to supplement insufficient income.

The United Nations' 2005 World Summit Outcome Document recognized that peace and security, development, and human rights are mutually reinforcing and together create a foundation for collective security. It is in this spirit that this report attempts to give a global overview of developmental and environmental challenges to human security, so that peace and security challenges may be better understood and dealt with in a broader context.

The content of this report is informed by the discussions at the International Peace Institute's Opening Symposium for the Task Forces on Strengthening Multilateral Security Capacity, addressing the topic of "Development, Resources, and Environment: Defining Challenges for the Security Agenda." The Symposium did not focus on solutions for the challenges highlighted, but rather attempted to provide a context for the work of the subsequent nine IPI working groups on transnational security challenges and inter- and intra-state armed conflict.

Underdevelopment

1. Over the past two decades, global economic integration and growth have contributed to poverty alleviation and higher living standards around the world. Trade, capital flows, foreign aid, technological improvements, and idea-sharing across international borders have enhanced human development and economic prospects in many developing countries. Yet, too many countries continue to suffer from widespread poverty and underdevelopment. Progress towards reaching the globally endorsed Millennium Development Goals (MDGs) has been uneven.[1] With notable exceptions like China, most countries are predicted to fall short of meeting most MDGs by the target date of 2015, with fragile states lagging furthest behind.[2] At the regional level, sub-Saharan Africa is behind on all eight goals, while South Asia is struggling to meet the MDGs that concern human development.[3]

2. Characteristics of underdevelopment include extreme poverty; disparity in delivery of social services including formalized education systems, medical facilities, and safe drinking water; poor or lacking infrastructure and governance capacity; and an environment of physical insecurity. All of these factors can collectively lead to a poverty trap,[4] in which poverty is widespread, cyclical, and intractable. The combination of these challenges contributes to a vicious circle of underdevelopment and fragility, which can overwhelm a state's operational capacity to deliver services and hinder long-term economic growth.

Poverty

3. In the past thirty years, there has been enormous progress in the fight against poverty. While the number of people living in extreme poverty worldwide stood at a daunting 1.4 billion in 2005,[5] this still represents a marked decrease

from twenty-five years earlier.[6] From 1981 to 2005, the world witnessed a halving of the percentage of people in the developing world living in extreme poverty, from 52 percent to 25 percent. Taking into consideration the global population increase during this period, this amounts to a 21 percent reduction in the global poverty rate.[7] An increase in economic opportunities and regular access to basic services such as water, medical care, and education has resulted in remarkable improvements in global living standards.

4. This global decrease in extreme poverty reflects notable progress in East Asia and the Pacific, where the $1.25/day poverty rate declined from 78 percent to 17 percent between 1981 and 2005, while the number of people in the region living in extreme poverty declined by more than 750 million over the same period.[8] China alone accounted for 627 million of the 750 million lifted out of extreme poverty in the region. Unfortunately, the number of extreme poor has risen in other regions. Between 1981 and 2005, this number almost doubled in sub-Saharan Africa, from 214 million to 390 million.[9] Moreover, there seems to have been little global progress in lowering the number of people living on less than $2/day,[10] which stood at about 2.5 billion in 2005, the same estimate as in 1981. In fact, while the number of people living on less than $1.25 globally has decreased, the number of people living on more than $1.25 but less than $2/day has increased, and dramatically—from 600 million to 1.2 billion.[11]

5. While poverty was higher in rural, less-densely-populated areas, it is now clearly present in urban centers and sprawls, too. In fact, poverty has been growing faster in urban areas than in rural areas over the past fifteen to twenty years.[12] In slums and in the peripheries of growing cities, the delivery of basic services and the opportunity for promising economic and political prospects is often lacking.

Rapid growth in urban populations strains the capacity of cities to deliver basic services, especially in countries with weak infrastructure. Urban residents compete for scarce political and economic opportunities, exacerbated by demographic trends such as the "youth bulge." While a great deal of attention has been paid to the phenomenon of failing states, these trends have brought some to suggest the possibility of "failed cities."[13] According to the World Bank, one-sixth of the world's population—or one in every three city dwellers—lives in a slum.[14] Over 90 percent of slum dwellers today live in the developing world, with the largest share accounted for by South Asia.[15]

6. In addition, the recent financial crisis is having devastating effects on the economies of developing countries. Declining aid flows, lower remittances from abroad, capital flights, fluctuating commodity prices, and slowing international trade all contribute to economic crisis at the national level. Total net private capital flows to developing countries declined from $1.2 trillion in 2007 to $707 billion in 2008.[16] Global foreign direct investment (FDI) flows may have declined by as much as 20 percent in 2008[17] and are projected to fall by 30 percent in 2009.[18] According to the World Bank, "capital flows from private sources will fall short of meeting developing countries' financing needs in 2009 by between $352 billion to $635 billion."[19]

7. These economic realities will have deleterious effects on the poor and on the most vulnerable groups of developing countries, which already have limited capacity to implement targeted policy responses to poverty. In 2009, more than 46 million people are expected to fall into poverty due to the economic crisis.[20] Domestic labor markets have been hit hard. The number of people in vulnerable employment in developing countries may have increased by 77 million between 2007 and 2008,[21] while the global youth

unemployment rate increased by 0.4 percent during the same period, with 76 million youth unemployed in 2008.[22]

Public Health

8. A critical element of chronic underdevelopment is poor public health. Despite great medical advances in the past century, many developing countries still experience poor health. Chronic poverty presents a significant obstacle to treatment in the developing world, where many are unable to take advantage of life-saving drugs and remedies. Poor transportation conditions, insufficient medical equipment, and a dearth of trained physicians reduce access to primary health services, from basic care at community clinics to emergency obstetric services and antiretroviral treatments. In countries such as Angola, Burundi, Papua New Guinea, and Sierra Leone, there is less than one doctor per 10,000 people, compared with 30-60 in most of the developed world.[23]

9. Weak and underfunded healthcare systems inhibit effective treatment for diseases that are curable or even preventable, such as pneumonia and diarrheal diseases, which are the two leading causes of death for children worldwide. Responsible for the deaths of approximately 2 million children per year, pneumonia kills more children than AIDS, measles, and malaria combined. Diarrheal diseases—partly caused by poor sanitation and unclean water—can be easily treated through oral rehydration therapy and increased feeding, but only 38 percent of children in developing countries receive the recommended treatment.[24] As a consequence, 1.7 million children perish each year from diarrheal diseases, accounting for 18 percent of deaths of children aged under five years.[25]

10. Disparities in health status correlate directly with disparities in wealth. Areas with particularly weak health systems display acute discrepancies in health status. For example, the regional mortality rate for children aged under five years in

sub-Saharan Africa is 41 percent lower for the uppermost wealth quintile than it is for the poorest quintile of society (see Figure 1).[26]

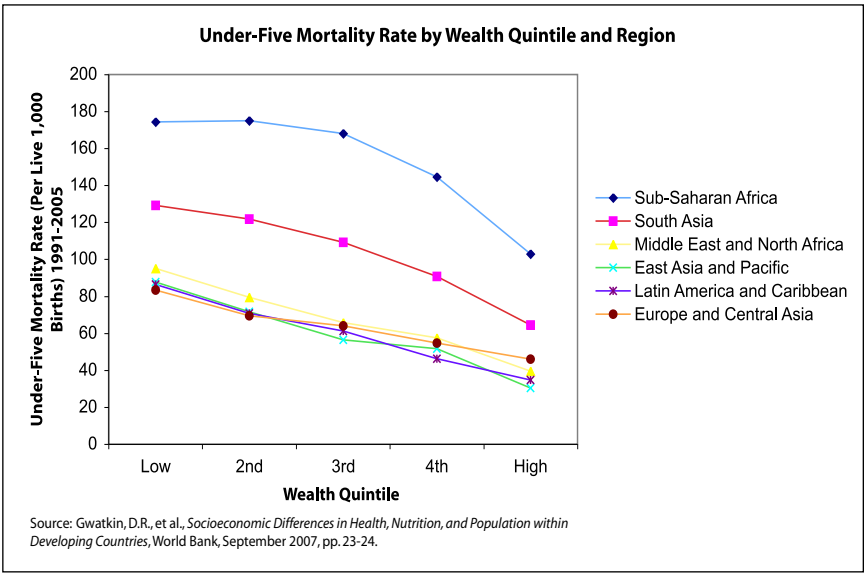


Figure 1

11. Since the 1980s, global vaccination efforts have resulted in significant progress in reducing the incidence of some preventable diseases such as polio and tuberculosis (TB). The Global Polio Eradication Initiative, launched in 1998, resulted in a 99 percent reduction by 2005, and more than 2 billion children worldwide have been immunized since 1988.[27] By 2003, national coverage rates for the Bacille Calmette Guerin (BCG) vaccine, which prevents TB, were up to an average 85 percent across all developing countries,[28] while in 2007 global coverage of DTP3 (a combined vaccine for diphtheria, pertussis, and tetanus given in three doses) was up to 81 percent.[29] However, there is still much progress to be made in the inoculation of children. In countries such as Chad, Equatorial Guinea, Gabon, and Somalia, less than 40 percent of children aged one year have been vaccinated

with DTP3.[30] As recently as 2003, approximately 25 percent of deaths of those aged under five years were caused by vaccine-preventable diseases, including pneumonia.[31]

12. Widespread diseases, such as malaria, TB, and HIV/AIDS, continue to plague the populations of developing countries. The global prevalence of TB has fallen since 1990, while the incidence rate—the number of new cases per 100,000 population—peaked in 2004 and has since been in decline,[32] yet nearly 2 million people died from this disease in 2007. Of those, almost 500,000 were HIV positive.[33] Malaria is largely concentrated in sub-Saharan Africa, where children bear the brunt of the disease. Of the nearly 1 million deaths caused by malaria in 2006, the majority were African children.[34] Between 2000 and 2003, 90 percent of under-five deaths due to malaria occurred in the sub-Saharan region.[35]

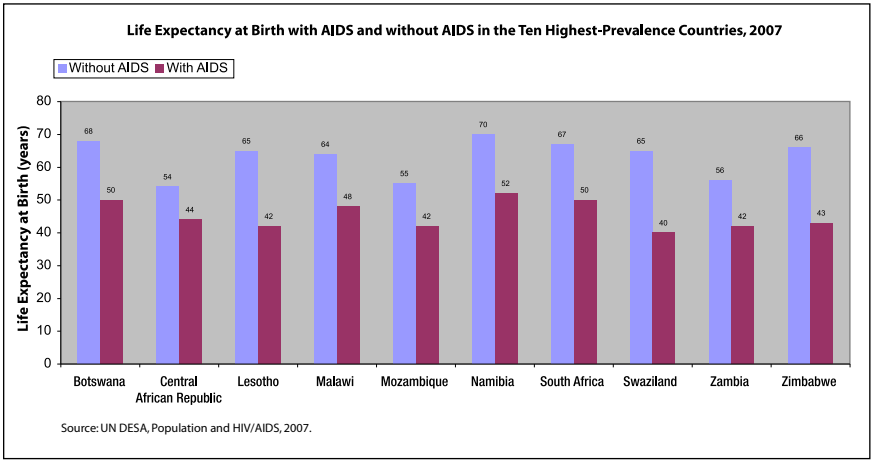


Figure 2

13. Sub-Saharan Africa also bears the greatest burden of the HIV/AIDS epidemic, which is responsible for drastic decreases in life expectancy (see Figure 2). The spread of the disease continues to be concentrated in this region, where approximately 70 percent of new HIV infections in

2007 occurred.[36] Across regions, HIV/AIDS has negative consequences for development. Illness and death of adult heads of household can strain family income, having negative effects on the health and well-being of children. Social and economic disruptions are felt throughout the community, where orphaned children strain social support networks and economic resources are redirected from various social services towards providing care for the sick.[37] On a national scale, the continuing loss of significant portions of the working-age population has deleterious effects for economic growth.[38]

Resource Scarcity

14. A second cardinal challenge to development, as well as to human security at large, is resource scarcity. The rapid increase in the global population and the acceleration of global economic activity have increased the demand for both renewable and finite natural resources. Unsustainable resource use has serious consequences for the environment, which in turn has implications for human development outcomes for health, hunger, and education. Indeed, more than 85 percent of major global diseases are partly caused by exposure to environmental risk factors such as poor sanitation, air pollution, and a lack of access to clean water.[39] Adding further stress, environmental challenges such as climate change exacerbate some forms of resource scarcity, such as water scarcity.

15. Economic growth is key to development and poverty reduction. Resource scarcity affects this in two ways: it increases the number of people in poverty, and it reduces the availability of inputs (water, energy, land, etc.) needed for development. As we continue to face declining availability of critical natural resources, the challenge will be to balance

the growing demand with economic progress and geopolitical stability.

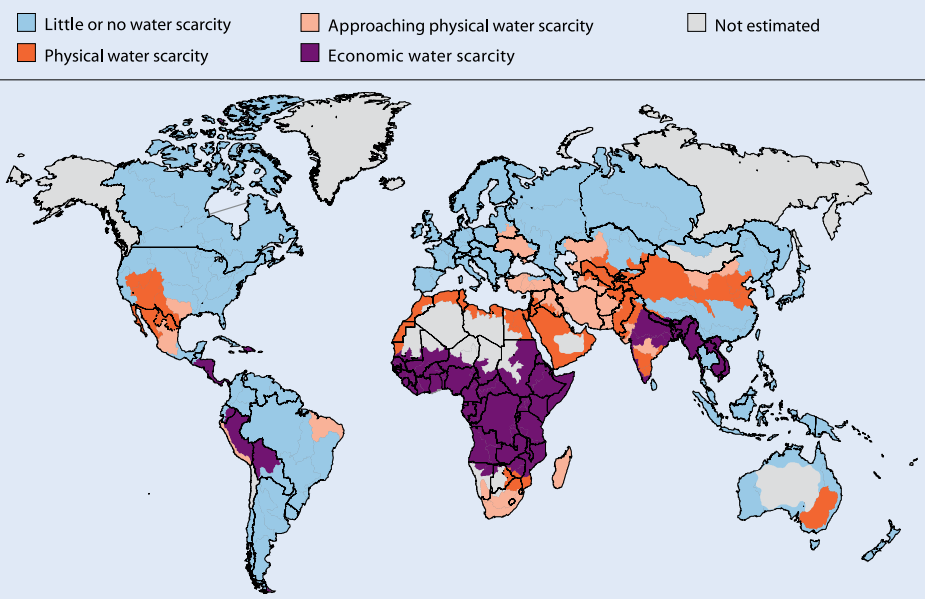
Water Scarcity

16. The fast pace of economic development and population growth has put increasing pressure on freshwater resources.[40] Groundwater levels in densely populated areas of North Africa, northern China, India, and Mexico, for instance, have been declining rapidly because of overuse.[41] But increased demand is only part of the story. Inefficient use and mismanagement of water resources also wastes enormous volumes of water in rural and urban settings each year. Moreover, changing climate patterns are projected to adversely affect surface water availability due to variations in precipitation levels and increases in temperature.

17. Threat of water scarcity is not limited to physical scarcity due to depletion from farming and human consumption, but also refers to a scarcity of uncontaminated water suitable for human use. The numbers point to a staggering shortfall in water supply in many parts of the world with over 1 billion people lacking access to clean water. Specifically, 1.1 billion people live more than one kilometer from the nearest safe water sources and are forced to collect water from drains, ditches, or streams that may be infected with pathogens and bacteria.[42]

18. Water scarcity has considerable repercussions on human well-being, including early deaths related to water-borne illnesses and the loss of educational opportunities for women and young girls whose time is spent carrying potable water over great distances. The UN Development Programme (UNDP) estimates that losses as a result of water and sanitation deficits amount to approximately 2.6 percent of developing country gross domestic product (GDP).[43]

Areas of Physical and Economic Water Scarcity



Definitions and indicators

- *Little or no water scarcity.* Abundant water resources relative to use, with less than 25 percent of water from rivers withdrawn for human purposes.
- *Physical water scarcity (water resources development is approaching or has exceeded sustainable limits).* More than 75 percent of river flows are withdrawn for agriculture, industry, and domestic purposes (accounting for recycling of return flows). This definition—relating water availability to water demand—implies that dry areas are not necessarily water scarce.
- *Approaching physical water scarcity.* More than 60 percent of river flows are withdrawn. These basins will experience physical water scarcity in the near future.
- *Economic water scarcity (human, institutional, and financial capital limit access to water even though water in nature is available locally to meet human demands).* Water resources are abundant relative to water use, with less than 25 percent of water from rivers withdrawn for human purposes, but malnutrition exists.

Source: UNEP/GRID-Arendal, Areas of physical and economic water scarcity, *UNEP/GRID-Arendal Maps and Graphics Library*, 2008. Available at http://maps.grida.no/go/graphic/areas-of-physical-and-economic-water-scarcity .

Figure 3

19. The lack of access to clean water disproportionately affects the poor. More than half of the 1.1 billion people without access to improved water are in the poorest 40 percent of the income distribution.[44] The problem is most acute in rural areas, where infrastructure is less centralized. In developing countries, access to water reaches 92 percent of urban areas, but only 72 percent of rural areas.[45] On a regional level, water scarcity is most pronounced in South Asia and the Middle East and North Africa, where population growth puts an additional strain on already low levels of freshwater resources.[46]

Food Security

20. Food security, which depends on food availability, access, and use, is an important component of human security. The definition adopted at the 1996 World Food Summit stipulates that food security is achieved when "all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."[47] Beginning in the early 1970s, global investments in agriculture, infrastructure, and social services made a significant impact on ensuring food security for the developing world.[48] However, since the mid-1990s, little progress has been made in combating food insecurity. For the 2003-2005 period, the Food and Agriculture Organization (FAO) estimated the number of undernourished worldwide at 848 million—approximately 6 million more than in 1990-1992. In recent years, this number has increased sharply due to high food prices, and it rose to 923 million in 2007.[49]

21. The recent escalation of food prices is due to many distinct factors, including income and population growth, higher energy and fertilizer prices, climate shocks, and an increased demand for biofuels. Over the past few years, high prices for staple goods, including corn, rice, and wheat, have shifted

expenditure patterns by large margins. Rapid increases in prices contribute to a sense of insecurity—in 2008, the FAO index of food prices rose drastically by 54 percent.[50]

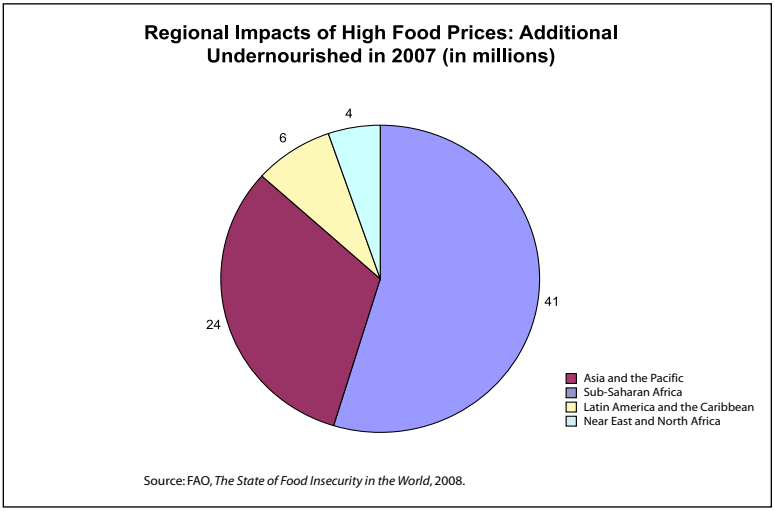


Figure 4

22. The effects of rising food prices are most pronounced in developing countries, where lack of food availability and reduced access to food exacerbate hunger and undernourishment. The FAO estimates that high food prices are mostly responsible for an increase of 75 million in the number of undernourished people in 2007, while hunger prevalence in the developing world had reached 17 percent by the end of that year, signaling a reversal in progress that had been made in reducing hunger from 20 to 16 percent from the 1990-1992 to the 2003-2005 period.[51]

23. Loss of disposable income due to rising food prices has the greatest impact on poor households. The International Monetary Fund (IMF) warns that food-price increases could cause a large increase in poverty in sub-Saharan Africa, where the average household spends approximately half of

its income on food.[52] Across regions, the effect on human welfare due to a rise in staple food prices is greatest in the poorest households, in both urban and rural areas.[53]

Energy Security

24. Fossil fuels, a finite natural resource, make up the vast majority of the world's energy use and will continue to do so in the coming decades. The International Energy Agency (IEA) projects that fossil fuels will make up 80 percent of global energy sources in 2030.[54] While the world relies on oil to meet most of its energy needs, current rates of consumption and supply are unsustainable over the long term. This is partly due to an increase in the rate of decline of oil reserves.[55] More upstream investment is required to meet rising demand and to compensate for the decline of existing reserves, which are becoming more and more costly to produce. While upstream investment has increased, it is as yet insufficient to ensure adequate energy access over the coming decades.

25. Imbalances in supply, market speculation, price volatility, and high demand have contributed to high prices which inhibit access, creating an environment of energy insecurity. Oil prices reached a peak of around $133/barrel in July 2008.[56] Since then, the collapse of the global economy has seen prices fall drastically, but continued demand for fossil fuels could result in a rebound, with prices beginning to climb again, even if this increase is not as marked as the price climbs that resulted in the peak of summer 2008. High demand is fueled by industrialized countries and continues to rise in emerging economies such as those of the BRIC countries (Brazil, Russia, India, and China). Between 2004 and 2007, China alone was responsible for 40 percent of the worldwide increase in oil consumption. Far from being deterred by the global recession, China is taking advantage

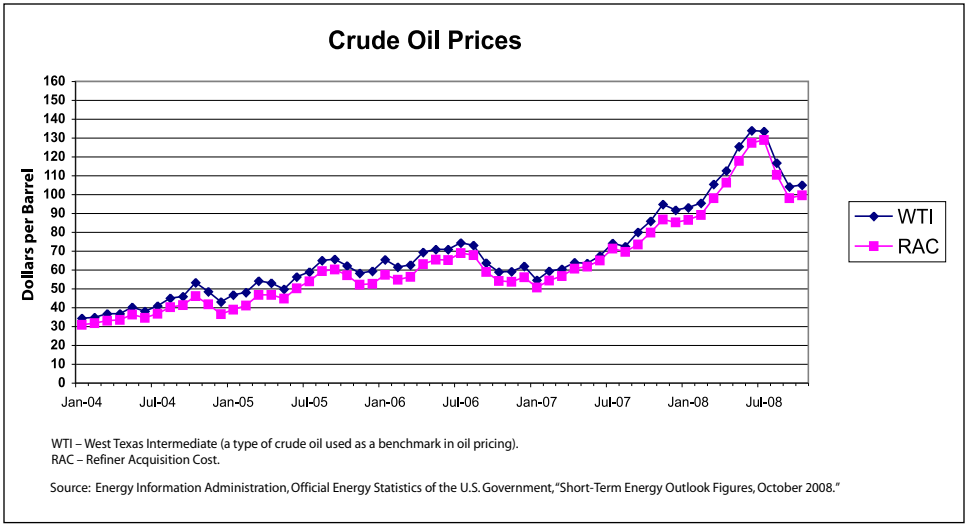


Figure 5

of low oil prices by using the opportunity to invest in energy assets to fuel its rapid growth.[57]

26. However, in the majority of the developing world, it is the lack of reliable and affordable energy that hinders economic growth. Energy access is hampered not only by high prices but also by poor distribution mechanisms and inadequate infrastructure. Recent figures from the *World Energy Outlook* indicate that the investment needed to update energy infrastructure looms at around $360 billion a year over 2005-2030.[58] In sub-Saharan Africa, unprecedented population growth puts additional pressure on weak energy infrastructure. Throughout the continent, gaps and service backlogs hinder distribution and reliable service provision due to poor operational structures and imperfect multi-stakeholder cooperation. Energy distribution largely to the private sector is creating challenges for the public promotion and protection of equitable energy supply distribution. The UNDP Sustainable Energy Programme has concluded that

achievement of the MDGs in Africa will not be possible without the creation of adequate modern energy services.

Environmental Degradation and Climate Change

27. The rapid pace of globalization and industrialization has left an indelible mark on the earth's ecosystems. The long-term effects of industry, as well as agriculture, have caused extensive environmental damage, including alteration of the earth's climate. Currently, many salient environmental threats are widespread and poorly managed. Systemic environmental issues cut across geographical boundaries. Climate change itself represents an extremely complex problem and promises to be one of the defining challenges for global collective action in the coming decades.

Deforestation and Desertification

28. With increasing population and economic growth, pressure has risen on land use through agriculture and forestry. Unsustainable use of forests and cropland has led to two salient forms of environmental degradation: deforestation and desertification. These effects of unsustainable land use are not only of pressing concern as independent environmental issues, but are also intimately linked to climate change.

29. Forest area declined worldwide at a rate of approximately 0.2 percent per year between 1990 and 2005.[59] However, the rate of deforestation varies widely from one region to another. In Africa, where the population is heavily dependent on land and natural resources, unsustainable forest use was responsible for almost one-third of global deforestation between 2000 and 2005, even though the region only holds around 16 percent of the world's forests.[60]

30. In recent years, high rates of deforestation in Africa have been driven largely by direct conversion of forest land use to small-scale permanent agriculture (responsible for 59 percent of deforestation from 1990 to 2000). In contrast, conversion to large-scale agriculture is the main culprit in Asia (responsible for 29 percent of deforestation) and Latin America and the Caribbean (47 percent).[61] Forest clearance for agricultural use is not driven by population growth alone. Recently, high prices for food grains and high demand for biofuel feedstock have also been important drivers.

31. High demand for forest products, from wood, to rubber, to palm oil, is also driving forest depletion. High energy prices have increased the demand for woodfuel in many developing areas. In Asia and the Pacific, almost three-quarters of the wood produced in the region is used for fuel.[62] Demand for other wood products has also risen due to the rapid growth of emerging economies such as India and China, which have greatly increased their imports of industrial roundwood in recent years.[63]

32. Land degradation affecting drylands, or desertification, is caused by both unsustainable human use through agriculture and climatic changes. Of the 2 billion people in the world who rely on drylands for sustenance, 90 percent of them reside in developing countries, where poor and rural populations are disproportionately affected by desertification.[64]

33. Desertification is closely tied to water scarcity. Populations in dryland areas are particularly vulnerable to decreased access to freshwater resources. While the minimum availability of freshwater per person to ensure human well-being is estimated at 2,000m^3/year, in 2000 the average availability per person in drylands was only 1,300m^3/year.[65] This lack of freshwater resources has profound implications for cropland use as well as for human health.

34. Land degradation not only impedes development but also has negative implications for the global climate. Deforestation increases the amount of greenhouse gases (GHGs) in the atmosphere, as it reduces the number of trees that can absorb carbon dioxide (CO_2). In turn, climate change exacerbates environmental degradation, as increased droughts in arable areas will accelerate desertification processes.

Climate Change

35. The rapid change in climate poses a serious threat to human security and international stability. Changes in rain patterns, extreme weather phenomena, and rising sea levels heighten vulnerability, particularly in poorer countries which do not have the operational capacity to respond to the change. Extreme storms and flooding will put more pressure on humanitarian response capacities, while the long-term changes in agricultural patterns will have deleterious effects on economic development and human health, and could trigger disasters such as famines and heat waves.

36. Climate change, caused by the release of carbon and other GHGs into the atmosphere, is undoubtedly the result of human activity through industrial development and other activities. In 2007, the Intergovernmental Panel on Climate Change (IPCC) released its fourth assessment report confirming that most of the observed increases in globally averaged temperatures since the mid-twentieth century have likely occurred due to an increase in human activity.[66]

37. This global increase in temperature, or global warming, is already evident in historical records (see Figure 6). Since the beginning of the industrial era, global average temperatures have already increased by about 0.74°C at an ever-quickening pace.[67] The pace of warming in the last half century (1956-2005, at a rate of 0.13°C) was almost twice the rate of warming for past 100 years (1906-2005).[68] Scientific

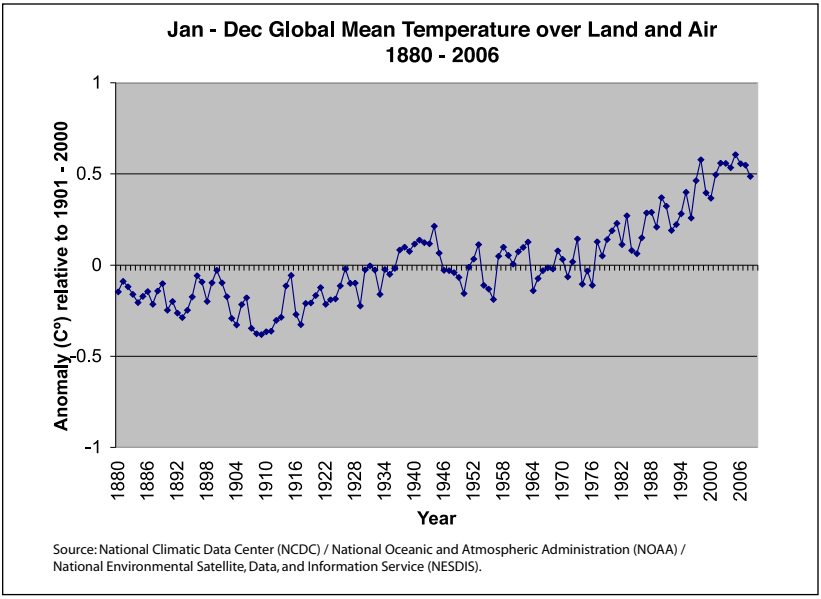


Figure 6

consensus holds that, for climate change to be manageable, total average temperature change must be stabilized at an increase of 2°C above preindustrial levels, which would require that GHGs be stabilized at concentrations of approximately 450 parts per million (ppm) CO_2e (carbon dioxide equivalents). Current GHG concentrations measure at 380ppm, while scenarios for the current century predict stabilization points beyond 750ppm, which would cause a temperature increase of over 5°C.[69]

38. Maintaining a level of 450 ppm CO_2e in the atmosphere would require massive changes in energy use. The most prominent form of CO_2 released into the atmosphere is from fossil fuels. Absent a major shift in energy consumption patterns, it is estimated that atmospheric CO_2 will continue to rise in the coming decades. According to an IPCC Emissions Scenario based on continuing rates of energy use in an environment of high economic growth, the level of

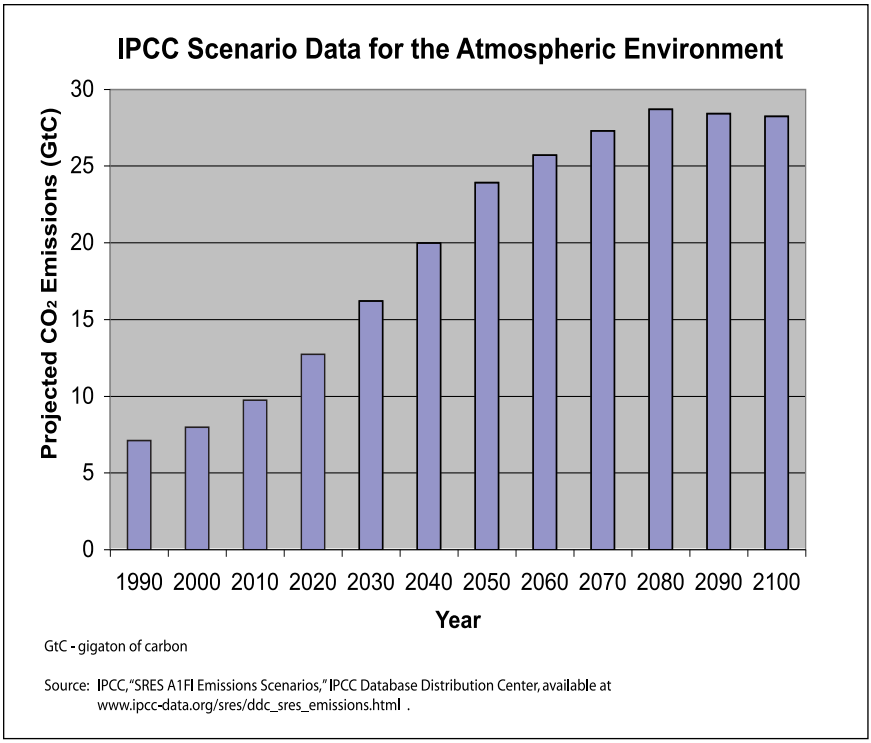


Figure 7

atmospheric CO_2 thirty years from now will be more than twice what it is today (see Figure 7).[70]

39. A rise in sea level has also been documented as consistent with temperature change, due to thermal expansion of the oceans and the melting of glaciers and ice caps and polar ice sheets.[71] Rising sea levels increase the threat of flooding, especially small island states in the Caribbean and Indian and Pacific oceans, as well as countries situated on major deltas, such as Bangladesh and Egypt. This is particularly troubling considering that many small island nations are located either at or just above sea level. The Maldives sit, on average, only 1 meter above sea level. A global rise in sea

level at or above 1 meter could therefore cause the entire nation's land mass to be submerged under water.

40. The warming of the oceans that is partly responsible for sea-level rise also causes an increase in extreme storms which heightens the threat of flooding. Coupled with increased precipitation in certain areas, the potential for mass migration is high. If global temperature were to rise by 3-4°C, resultant flooding would cause the temporary or permanent displacement of 330 million people.[72] The humanitarian aftermath of 2008's Cyclone Nargis in the Irrawaddy Delta of Myanmar (which caused the displacement of 800,000 people)[73] is testament to the kind of human catastrophe likely to occur in increasing frequency with the acceleration of climate change's effects.

41. Along with climatic disasters, intensification in resource scarcity could also lead to the rise of "climate refugees" across the developing world. Some have suggested that by 2050, up to 200 million people could be forced to migrate due to environmental factors.[74] While some experts think such cross-border migration very likely, others predict that climate-induced displacement is more likely to cause migration within, and not between, borders. Internal displacement could put a serious strain on state response capacity, while cross-border migration could increase interstate tensions.[75]

42. Competition for scarce resources will likely increase due to a rise in drought, desertification, and changes in rainfall patterns. These effects will be especially acute in already arid regions and in areas of extreme poverty, where much of the population relies directly on agriculture. In the dryland areas of sub-Saharan Africa, disruptions in agriculture caused by climatic changes could have profound economic repercussions, with a revenue loss of 26 percent by 2060.[76]

43. Disruptions in access to water and food will not only have economic effects but also profound consequences for human health. The damage to crops from rising temperatures could cause food shortages among 50 percent of the world's population by the end of the century.[77] Higher temperatures will cause more heat waves, as well as an increase in the transmission of infectious vector-borne diseases, both of which will raise mortality levels in developing countries. Malaria, in particular, will become much more widespread, as a result of mosquitoes moving to higher latitudes as temperatures become warmer. It is possible that the increased "transmission zones" could result in 260 to 320 million more people being infected with malaria by 2080.[78]

Conclusion

44. Just as economic and technological growth can drive millions out of poverty, the side effects of rapid social change can dramatically impact the availability of resources and the environment, undermining decades of progress on poverty eradication and gains in global public health. A full understanding of the interconnections between and knock-on effects of developmental and environmental challenges is necessary in designing responses at the multilateral level. A coherent and systemic approach, which takes into account impacts on international security, is required. For example, underdevelopment can be a root cause of conflict or a result of conflict; scarcity can amplify tensions over access to and ownership of natural resources, potentially reviving old conflicts or triggering new ones; while environmental degradation and climate change present the most basic challenges to security, threatening the very ecosystems where we live and breathe.

45. In turn, the international community should bear in mind how underdevelopment, resource scarcity, and environ-

mental degradation can contribute to or hinder progress in addressing pertinent challenges to peace and security. From counterterrorism to peacebuilding, multilateral efforts to combat transnational threats, and to lessen the occurrence and impact of conflict, must be understood in the context of the developing world's material landscape and the day-to-day human security challenges that endanger its populations.

46. Widespread pressures on the earth's environment, its resources, and the material well-being of its poorest inhabitants, speak to the urgency of strengthening multilateral efforts to ensure international security. Just as there can be no security without development, there can be no development without security.[79] Conflict and its aftermath can roll back hard-won progress in combating poverty, while tensions over nuclear proliferation and disarmament can inhibit international cooperation on creating alternative sources of energy for the developing world. In recognition of the importance of strengthening multilateral security capacity to ensure global stability and international cooperation, the *IPI Blue Papers* that follow present concrete ideas for action for addressing some of the most pertinent security challenges facing the world today.

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Annex 1: Methodology and Timeline

Four questions guided the Task Forces in helping IPI to generate policy and institutional ideas for action:

1. What are the current policy and institutional shortcomings in multilateral security capacity on these issues?
2. Why have previous attempts to address these shortcomings failed?
3. What policies and institutional renovations, including legal frameworks and financial arrangements, are needed?
4. What strategy is needed to achieve these renovations?

The Opening Symposium on Development, Resources, and Environment served as an essential backdrop to the Task Forces. By examining these critical related issues, the symposium provided a larger geopolitical and economic context for the work of the subsequent Task Forces on security challenges. The two Task Forces, convened sequentially, addressed two thematic clusters of issues, each of which were broken down into smaller roundtables, as follows:

Task Force One	**Transnational Security Challenges** 1. Transnational Organized Crime 2. Weapons of Mass Destruction 3. Global Terrorism 4. Small Arms and Light Weapons 5. Biosecurity
Task Force Two	**Inter- and Intra-state Armed Conflict** 6. Peace Operations 7. Mediation and Peace Processes 8. Peacebuilding 9. Conflict Prevention and the Responsibility to Protect

Each Task Force consisted of members drawn from UN member states, academia, and policy-research institutions. The composition of each group ensured a broad range of perspectives regarding multilateral security capacity on the issues in question. Through this intensive work process, the Task Forces constituted core groups of stakeholders with an interest in developing practical strategies for addressing the institutional and policy shortcomings in these areas.

Task Force members met in opening and closing plenary sessions, as indicated below. Experts, in collaboration with IPI, prepared a series of non-papers, serving as a basis for discussion. Smaller groups gathered between the plenary sessions in roundtables, along with invited guest experts, for more in-depth, topic-specific discussions. Following each roundtable IPI produced a summary reflecting the group's discussions that served as a guide for the closing plenary session. Likewise, IPI drew on the Task Force deliberations to produce the final reports, detailing practical and achievable steps for strengthening multilateral action in the area in question. As noted, the content of these reports is the responsibility of IPI, and does not necessarily represent the positions or opinions of individual Task Force participants.

TIMELINE

Opening Symposium "Development, Resources, and Environment: Defining Challenges for the Security Agenda"
February 7-8, 2008 [Greentree Estate, Long Island]

Task Force One: Transnational Security Challenges

Opening Plenary Meeting
April 2-4, 2008 [Greentree Estate, Long Island]

1. Roundtable on **Transnational Organized Crime**
   April 10-11, 2008 [Millennium UN Plaza Hotel, New York]
2. Roundtable on **Weapons of Mass Destruction**
   April 24-25, 2008 [IPI, New York]

3. Roundtable on **Global Terrorism**
   May 1-2, 2008 [IPI, New York]

4. Roundtable on **Small Arms and Light Weapons**
   May 8-9, 2008 [Millennium UN Plaza Hotel, New York]

5. Roundtable on **Biosecurity**
   May 21-22, 2008 [IPI, New York]

Closing Plenary Meeting
May 28-30, 2008 [Greentree Estate, Long Island]

Task Force Two: Inter- and Intra-state Armed Conflict

Opening Plenary Meeting
June 11-12, 2008 [Greentree Estate, Long Island]

6. Roundtable on **Peace Operations**
   June 16-17, 2008 [IPI, New York]

7. Roundtable on **Mediation and Peace Processes**
   June 30-July 1, 2008 [IPI, New York]

8. Roundtable on **Peacebuilding**
   July 2-3, 2008 [IPI, New York]

9. Roundtable on **Conflict Prevention and the Responsibility to Protect**
   July 8-9, 2008 [IPI, New York]

Closing Plenary Meeting
October 15-16, 2008 [Greentree Estate, Long Island]

Annex 2: Task Force Participants

Co-Chairs

H.E. Mr. Abdullah M. Alsaidi, *Permanent Representative of the Republic of Yemen to the United Nations*

H.E. Mr. Dumisani Shadrack Kumalo, *Permanent Representative of the Republic of South Africa to the United Nations*

H.E. Mr. Claude Heller, *Permanent Representative of Mexico to the United Nations*

H.E. Mr. Peter Maurer, *Permanent Representative of Switzerland to the United Nations*

H.E. Mr. John McNee, *Permanent Representative of Canada to the United Nations*

H.E. Mr. Vanu Gopala Menon, *Permanent Representative of the Republic of Singapore to the United Nations*

H.E. Mr. Heraldo Muñoz, *Permanent Representative of Chile to the United Nations*

H.E. R.M. Marty M. Natalegawa, *Permanent Representative of the Republic of Indonesia to the United Nations*

H.E. Mr. Christian Wenaweser, *Permanent Representative of the Principality of Liechtenstein to the United Nations*

Permanent Missions and Delegations to the United Nations

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Argentina
Australia
Austria
Bangladesh
Brazil
Canada
Chile
China
Colombia
Costa Rica
Cuba
Czech Republic
Denmark
Egypt
Ethiopia
European Union
Finland
France
Germany
Ghana
Greece
India
Indonesia
Ireland
Israel
Japan
Liechtenstein
Lithuania
Luxembourg
Malaysia
Mexico
Morocco
Mozambique
Netherlands
New Zealand
Niger
Nigeria
Norway
Pakistan
Palau
Portugal
Qatar
Republic of Korea
Romania
Russian Federation
Singapore
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Task Force One on Transnational Security Challenges

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