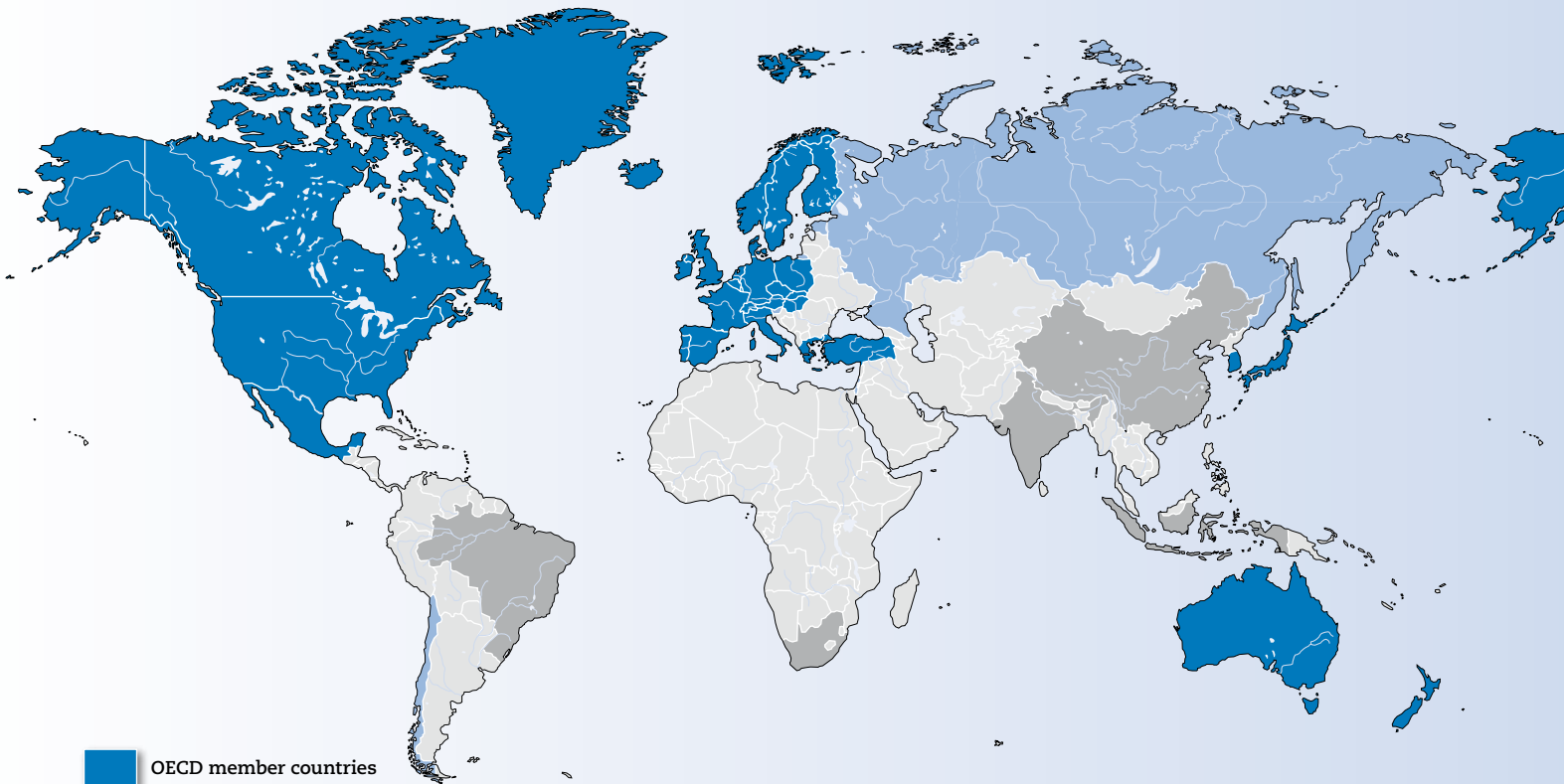


OECD WORK ON

THE INTERNATIONAL FUTURES PROGRAMME

HORIZONS





OECD member countries

Australia	Hungary	Norway
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The International Futures Programme (IFP), housed within the Advisory Unit to the Secretary-General, is the OECD's forward studies group that has provided strategic, long-term thinking and horizon scanning for the organisation since 1990. It explores emerging policy issues for member countries, and tests new topics and fresh perspectives not usually addressed elsewhere in the OECD. The IFP reports directly to the Secretary-General, providing him with a flexible instrument with which to explore the longer-term problems – and address rapidly emerging problems – facing the global economy. The principal platforms for the IFP's activities are workshops and multi-year projects. The IFP relies heavily on voluntary contributions and grants from government departments, research institutes, corporations and foundations; together, these bodies fund about 75% of the IFP's activities.

Preface

Effective policy making and corporate management call for a critical yet open-minded approach to the range of possible future developments, their implications, and the strategic decisions that may shape them. In today's complex and uncertain world, any sort of valid assessment of future trends is a formidable challenge. Economic, social and technological forces are combining to drive change along at great speed, and bewildering torrents of ideas and information compete for attention. All of this makes it increasingly hard to discern the key factors affecting long-term developments.

The International Futures Programme is designed to help policy makers in government and business come to grips with this challenge. IFP events offer a platform where policy makers can freely confront their visions and concerns about the future, seek the views of others, and engage in a stimulating dialogue. In this way they gain a better understanding of the issues at stake. The International Futures Programme offers a number of distinguishing features for government and partners in business and research:

- *Improved* monitoring of the long-term economic and social horizon, with early warning on emerging domestic and international issues.
- *More* accurate pinpointing of major developments and possible trend breaks.
- *Greater* analytical appreciation of key long-term issues.
- *Better* dialogue and information sharing to help set policy agendas and map strategy.

A variety of tools are used, ranging from horizon scanning and trend analysis to scenario construction, focus groups and policy analysis.

Michael Osborne

*Director of the OECD's Advisory Unit to the Secretary-General
Head of the International Futures Programme*

OECD WORK ON The International Futures Programme

- Horizon Scanning and Scoping
- Infrastructures to 2030
- Risk Management Reviews
- The Space Economy
- The Bioeconomy to 2030
- The Future of International Migration to OECD Countries
- The Family in 2030
- The OECD Review of Italy's National Civil Protection System
- Future Global Shocks
- Transcontinental Infrastructure Needs

Horizon Scanning and Scoping

IFP activities are underpinned by a continual process of horizon scanning to keep abreast of global and regional developments and events, review longer-term challenges for OECD economies and societies, and identify new key issues as they emerge.

Once an issue has been selected for further consideration, the scoping process begins. This involves, inter alia, a systematic assessment of a topic's suitability as a future project in terms of its policy relevance, the risk of duplication with other work within or outside the Organisation, potential value added for the OECD and member countries, and potential sponsors.



The Focus of Recent and Ongoing Work

The IFP's recent work programme has concentrated on developing a *long-term* perspective on two fundamental questions:

- ▶ What are the potential sources of risks and opportunities confronting sustained economic and social development in OECD countries? Here, work has focused, first, on how to meet the world's growing infrastructure investment needs; and secondly, on co-ordinating the management of risk assessment, the logistics of risk communication, mitigation measures, and emergency relief efforts involved in, *e.g.*, natural disasters and serious information security breaches.
- ▶ Which relatively new economic sectors hold out significant potential in terms of their contribution to economic growth and innovation? Here, attention has turned to the space economy and the emerging bioeconomy as well as infrastructure. These themes are closely linked to the Organisation's priorities, including work on climate change and innovation. Also, these projects offer ample opportunity to advance the dialogue on globalisation.



Infrastructures to 2030

This project – involving telecoms, land transport, water and electricity – explored the many factors shaping demand for infrastructures worldwide over the coming decades, and pointed to the mounting difficulties, particularly in OECD countries, of financing growing infrastructure needs from public sector sources. To bridge the “infrastructure investment gap” it will be essential to build and operate infrastructures more efficiently – through demand management and the integration of new technologies, for example – and to seek out and develop new innovative funding mechanisms, both public and private.

The IFP project team was expertly advised throughout by a high-level Steering Group of senior officials from a variety of government departments and public utilities; business executives from international banks; and construction and engineering firms from 12 OECD countries.

The project resulted in two publications that have enjoyed extensive coverage in the international media.

DID YOU KNOW The number of telephone service users worldwide is expected to grow from 800 000 in 2004 to over 5 billion in 2020.



Risk Management Reviews

The IFP's risk management reviews are an example of the “hands-on” advice it offers member governments on implementing results from previous projects. In this case, the idea of pilot reviews flowed from the 2000-02 project on “Emerging Systemic Risks”.

In 2007, the work on risk continued to focus on a series of pilot country reviews. Japan invited the IFP to conduct two studies of risk management practices in Japan, one on large-scale flooding and the other on earthquakes. Because of its long experience with major natural disasters, Japan leads international best practice in many fields, such as early warning technology, coastal defences against flooding, and earthquake proofing of buildings. However, in view of the challenges from climate change that Japan is facing in the years ahead, there is room for engaging more measures of a non-structural kind – such as systematic hazard mapping for prevention purposes – and more streamlined co-ordination of national, regional and local-level management of major floods. There was a presentation in Tokyo in the spring of 2008 of the two final Japan reports on floods and earthquakes.

A number of further reviews will be undertaken in 2008 and 2009, before a synthesis report on lessons learned from all the reviews is produced in 2010.

DID YOU KNOW About half of Japan's population and three-quarters of its economic assets are concentrated in flood-prone areas, and almost 5.5 million people live in areas below sea level.



The Space Economy

In 2003 the IFP embarked on a project called “Space 2030: Tackling Society’s Challenges”. A key finding of the two-year endeavour was that the space sector is both short on economic analysis and widely undersold in terms of its contribution to resolving global challenges, such as climate change; protection of natural resources; and the health and education divide between developed and developing countries. As a follow-up to the project, OECD member country space agencies and ministries entered into a partnership with the IFP, forming an OECD Global Forum on Space Economics to look for robust ways to address these shortcomings. The focus has been on 1) improving the statistical basis for economic

analysis of the space sector, and 2) carrying out case studies on the potential of earth observation systems to sustain the world’s fresh water resources, monitor climate change and protect marine resources.

Guidance and advice are provided by a very distinguished Steering Group consisting of high-level representation from the British National Space Centre, the Canadian Space Agency, CNES (France), ESA, the Italian Space Agency, NASA (United States), NOAA (United States), the Norwegian Space Centre, and the US Geological Survey. Efforts are under way to include Japan, Brazil and India in the group.



DID YOU KNOW As a slice of GDP, India’s space budget is second only to that of the United States.

2007 saw the publication of the “OECD Space Economy at a Glance”, the first-ever OECD statistical overview of the emerging space economy. The book also offered an assessment of the problems involved in deriving internationally comparable data for the industry and its downstream activities. Other outputs are expected later in 2009.

The IFP publication *Space Technologies and Climate Change: Implications for Water Management, Marine Resources and Maritime Transport*, which came out in November 2008, was well received by the space community. It was distributed at the European Space Agency’s Ministerial Conference in The Hague the month of its publication, and also featured at the United Nations’ Climate Change Conference in Poznań in December 2008.



The Bioeconomy to 2030

The OECD Bioeconomy to 2030 project is developing long-term scenarios to explore how biotechnology-related developments in health, agriculture and industry are likely to impact on the economy and society. In particular, the project is asking what policy changes will be required to ensure that over the coming decades the benefits of the bioeconomy are reaped in full. This analysis is closely aligned with work under way in the Science, Technology and Industry Directorate on various biotechnology-related themes; the results of the project can then serve as a longer-term frame of reference for the activities of STI's Working Party on Biotechnology.

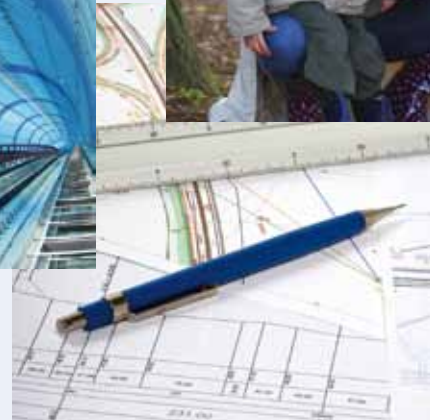
Expert guidance and advice is provided to the IFP team via the project's Steering Group, which consists of senior officials from a wide range of government departments as well as experts from a number of corporations active in biotechnology from 18 member countries.

The Bioeconomy project will be completed in 2009; a large number of the scheduled papers on projections, scenarios, intellectual property and future business models are either already drafted or in preparation. The final report will be published and disseminated in 2009.

DID YOU KNOW Contrary to popular belief, the major socioeconomic effects of biotech in the mid-term will likely be in agriculture, not health.



Upcoming Activities



The Future of International Migration to OECD Countries

In the OECD area, there were about 82 million migrants at the turn of the millennium, and immigration flows have remained high ever since. Worldwide, there are about 191 million migrants and displaced persons, and some 30-40 million unauthorised migrants.

Migration was already high on the policy agenda of many OECD countries, but it is now set to become a major national and international policy issue as these trends continue and perhaps even accelerate. The economic and social implications for the sending and receiving countries alike are far-reaching, and the stakes huge. Currently, accurate forecasting of future migratory flows is not possible. Even so, decision makers in government, business and society at large would be better equipped to address the opportunities and risks if they had a greater understanding of the complexities and the wider context of future migration flows.

The IFP is proposing a project to explore the main factors shaping the global migration landscape over the next 20-25 years. The focus is on both factors that “push” emigration from developing countries – such as poverty, lack of employment prospects, environmental disasters, and civil strife – and those that “pull” migrants to OECD countries, such as higher living standards, education and employment opportunities, ageing populations and potentially significant skill shortages. The project would examine not only key underlying drivers, but also scenarios aimed at providing a better grasp of the issues that public and private actors will need to address in the near term.

DID YOU KNOW *The most important sending regions in order of quantitative importance are Latin America, Asia and Wider Europe.*

The endeavour will bring together a diverse range of senior officials from government departments, agencies and corporations, as well as specialists from leading research institutes, foundations and international organisations. In preparing the event, the IFP will be collaborating closely with other, specialised OECD directorates, in particular with the International Migration Division of the Directorate for Employment, Labour and Social Affairs.

Insights gained from the workshop could serve as useful building blocks in governments' strategic thinking on the issue. This input would also enable them to develop a long-range view of the future and the policy options that may need to be developed if international migration is to be constructively harnessed for the good of long-term social and economic development.



The Family in 2030

Since the 1960s the family in the OECD area has undergone significant transformation. In many countries the extended family has all but disappeared, and the traditional two-parent family has become much less widespread as divorce rates, remarriages, single parenthood etc. have increased. With rising migration, cultures and values have become more diverse; some ethnic minorities have evolved as parallel family cultures while others intermingle with mainstream cultures through mixed-race marriages. Families have seen more mothers take up work in the labour market, their children spend more hours in front of TV sets, their adolescents spend longer and longer in education and training, and the elderly members of the family live longer and, increasingly, alone. The repercussions of these changes have been remarkable, and of great interest to member countries.

Why should the future of the family interest policy makers? Because it offers them a prism through which they can both consider how society might change over the coming decades, and be better prepared for those changes. It is through the lens

of the family that multifaceted developments can be explored – and perhaps anticipated – in housing, health, work, welfare, leisure, migration, finance, the economy, technology, and other areas.

The IFP plans to explore these issues in a project that would involve an extensive review of the literature; wide consultation in country capitals and the private sector, NGOs and foundations in order to sound out interest and priorities; and preparation of background and original research papers.

Will the continuing fragmentation of the family lead to chronic housing shortages and overstretched long-term care facilities for the elderly? Will we see networks of loosely connected family members from different marriages, partnerships and generations emerging, who devise fresh approaches to cohesion and solidarity? What about new, potentially disruptive factors, such as ICT and (especially) the Internet? Facebook and YouTube are revolutionising social interaction. How will this shape young people's values and behaviour?

DID YOU KNOW *The share of family/children benefits as a percentage of GDP varies widely among OECD countries – e.g. from 3.9% in Denmark to 2% in Belgium (2004).*



The OECD Review of Italy's National Civil Protection System

In Italy, the incidence of calamitous natural disasters is very high, with a record of hundreds of thousands of casualties in the past century. The threat of natural hazards – including earthquakes, landslides, flooding, volcanoes, tsunamis and forest fires – is greater than anywhere else in Europe, and the country has had to learn how best to cope with and manage such challenges. Those lessons led to the creation of the Italian Civil Protection Department, and its institutional mandate to manage national emergencies as central co-ordinator for national alerts and emergency response.

The International Futures Programme is embarking on a review of the system in order to assist Italy in evaluating its effectiveness – notably in terms of its ability to contend with future large-scale risks – and to offer guidance in making any needed improvements.

A notable feature of the risk management review is that it will cover a wide range of the hazards mentioned above. The OECD Secretariat and the Italian Civil Protection authorities have developed a tool for the self-assessment of existing policies and institutions that address these hazards. The tool will be put to use by a team of international experts brought together by the Secretariat. After discussing its results with risk management authorities at various levels of government, the expert team will deliver a report emphasising good practices and areas for improvement, and make policy recommendations.

The review will also serve as a basis for Italy to exchange information, experience and best practice with other countries participating in the IFP Project on Risk Management Policies.

DID YOU KNOW Southern Italy has the highest concentration of active volcanoes in Europe – Vesuvius, Mount Etna, the islands of Stromboli and Volcano, the Campi Flegri.



Future Global Shocks

The latest financial and economic crisis is just one example of an *extreme event*, which is to say one of low probability that carries extreme consequences. The crisis was considered so unlikely to ever occur that forward-looking risk management did not provide any real contingency planning.

All sorts of vectors, triggers, thresholds and tipping points can turn a single hazard, a combination of hazards or incremental developments into a more or less catastrophic situation. A catalogue of emerging risks such as the breakdown of critical information infrastructures and complex supply chains can produce “improbable” events such as three back-to-back hurricanes along the US Gulf coast in 2005; 9/11; nuclear plant disasters; at least eight financial crises with global ramifications since 1987; and a series of severe natural catastrophes in Europe. Moreover, efforts and resources poured into countering, for example, a pandemic can render governments unequipped to handle other concurrent or slightly later events.

The world can never be made “shock-free”. However, adequate preparation can render countries “shock-absorbent”, that is to

say make their economic and social systems more resilient to the consequences of extreme events. And with policy foresight, countries can, to some degree, see the event coming and obviate it.

The purpose of the Future Global Shocks project is to bring together experts from the public and private sector in order to review the changing risks landscape; analyse the increasing complexity of systems and the lessons learned from past and recent small- and large-scale disasters; identify gaps in knowledge and requirements for co-operation between actors; and finally, propose a set of policy options to OECD governments that aim to anticipate future global shocks and enhance the shock-resilience of the global economy and society in the years to come.

DID YOU KNOW

When the financial crisis broke, it was called a 10-sigma or one-in-10,000-years event, and it was claimed that no modelling would have been capable of preparing for such an extreme risk.

Transcontinental Infrastructure Needs

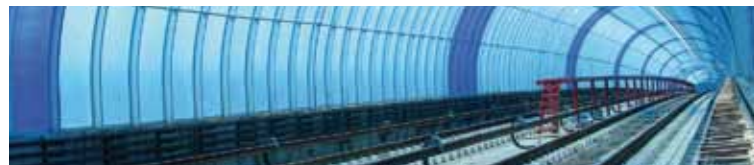
Over the next 20 years or so, international trade is expected to expand strongly at an average annual rate of about 5%-7% per year. But will there be sufficient capacity at airports and seaports, on transcontinental rail routes and in pipelines to handle the increased flows of goods and passengers? Preliminary evidence suggests this may not be the case.

Worldwide demand for air transport is expected to reach 7 billion passengers by 2020 (9 billion by 2025), while capacity is expected to be able to deal comfortably with only about 6 billion. Seaborne trade, which has already doubled since the mid-1980s, is expected to continue to expand, putting continued pressure on port handling capacity around the globe. Between now and 2030 Europe's main ports, for example, are likely to see the volume of solid bulk goods increase by 85% and the handling of container goods by a massive 620%.

Congestion has also been rife at many major ports in North America and Asia. Should the problem worsen, attention could turn increasingly to alternative transcontinental rail routes

(e.g. Trans-Siberia, Canada-Alaska-Russia, Latin America). But while these routes can offer considerable time and cost savings, it is unlikely that they could handle substantial increases in freight traffic without major investments. Meanwhile in the energy field, the transport routes for oil and gas supplies for many OECD countries look set to lengthen with the growing concentration of reserves in resource-rich regions (the Middle East, Africa, Russia). And as demand for power continues to grow, so will the need for electricity transmission across borders and between continents.

If the international trading system is to function properly, it must have adequate and properly functioning international infrastructure. Where will the principal bottlenecks and "hotspots" occur? How much investment will be required, and



how can adequate financing be mobilised to build the much-needed additional capacity? What can be done to raise capacity by improving the management of these infrastructures?

The proposed gateway infrastructure project would assess growth prospects in international trade and movements of people to 2025/2030; assess current and planned capacity at ports, airports, transcontinental rail routes and oil and gas pipelines; estimate investment requirements to 2030; explore traditional and promising new funding models; and examine the scope for improving capacity at ports and airports.

Geographical coverage would be global – the OECD member countries plus Brazil, China, India and Russia.

DID YOU KNOW The Chinese government is planning to build 97 new regional airports by 2020 at an estimated cost of USD 62.5 billion.



The International Futures Programme team

The IFP is a small core team of professionals acting as a Secretariat within the OECD. The Team works with over 500 senior in-house and outside professionals and experts worldwide.

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Publications

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IFP Publications available from the OECD Online Bookshop:

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- ▶ The Bioeconomy to 2030 (2009)
- ▶ Space Technologies and Climate Change (2008)
- ▶ The Space Economy at a Glance (2007)
- ▶ Infrastructure to 2030, Volume 2: Mapping Policy for Electricity, Water and Transport (2007)
- ▶ OECD Review of Risk Management Policies: Safety of Older People in Sweden (2007)
- ▶ Infrastructure to 2030: Telecom, Land Transport, Water and Electricity (2006)
- ▶ OECD Reviews of Risk Management Policies – Norway: Information Security (2006)
- ▶ Space 2030: Tackling Society's Challenges (2005)
- ▶ Regional Integration in the Asia Pacific (2005)
- ▶ Space 2030: Exploring the Future of Space Applications (2004)
- ▶ The Security Economy (2004)
- ▶ Large-Scale Disasters: Lessons Learned (2004)
- ▶ Emerging Risks in the 21st Century: An Agenda for Action (2003)
- ▶ The Future of Money (2002)

The following publications can be downloaded:

EXPO 2000 publications

- ▶ Governance in the 21st Century (2001)
- ▶ The Creative Society in the 21st Century (2000)
- ▶ The Future of the Global Economy: Towards a Long Boom? (1999)
- ▶ 21st Century Technologies: Promises and Perils of a Dynamic Future (1998)

Other publications

- ▶ Energy: The Next Fifty Years (1999)
- ▶ The Future of Food (1998)
- ▶ Societal Cohesion and the Globalising Economy (1997)
- ▶ The Future of International Air Transport: Responding to Global Change (1997)
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- ▶ Future Global Capital Shortages: Real Threat or Pure Fiction? (1996)
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- ▶ Long-Term Prospects for the World Economy (1992)
- ▶ Strategic Industries in a Global Economy: Policy Issues for the 1990s (1991)
- ▶ Trade, Investment and Technology in the 1990s (1991)
- ▶ Interdependence and Co-operation in Tomorrow's World: A Symposium Marking the 25th Anniversary of the OECD (1987)

The Organisation for Economic Co-operation and Development (OECD)

The OECD is an intergovernmental organisation which brings together 30 member countries sharing a commitment to democratic government and the market economy. Founded in 1961, the OECD provides a multilateral forum to discuss, develop and reform economic and social policies. The OECD's mission is to promote policies designed to:

- ▶ Achieve the highest sustainable economic growth and employment and a rising standard of living in member countries, while maintaining financial stability and thus contributing to the development of the world economy.
- ▶ Contribute to sound economic expansion in member countries as well as non-OECD economies in the process of development.
- ▶ Contribute to the expansion of world trade on a multilateral, non-discriminatory basis, in accordance with international obligations.

In pursuit of these goals, the OECD plays a prominent role in fostering good governance in the public service and in corporate activity. It helps governments to ensure the responsiveness of key economic areas, and provides sectoral monitoring. By identifying emerging issues and policies that work well, it helps policy makers develop strategic orientations.

The OECD is one of the world's largest and most reliable sources of comparable statistical, economic and social data. It monitors trends, collects data, analyses and forecasts economic development, and investigates evolving patterns in a broad range of public policy areas such as agriculture, education, environment, taxation and trade, in addition to science, technology, industry and innovation.

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