



The Millennium Project



AGENDA

Millennium Project 01

Who we are | 1.1

Purpose | 1.2

Mission | 1.3

Vision | 1.4

What we do | 1.5

15 Global Challenges | 1.6

1. Millennium Project

The Millennium Project

founded in 1996



Connects futurists around the world to improve global foresight. It was **founded in 1996** after a three-year feasibility study with **the United Nations University, Smithsonian Institution, Futures Group International, and the American Council for the UNU**. It is now an **independent non-profit global participatory futures research think tank** of futurists, scholars, business planners, and policy makers who work for international organizations, governments, corporations, NGOs, and universities. The Millennium Project manages a coherent and cumulative process that **collects and assesses judgments from over 3,500 people** since the beginning of the project, selected by its 63 [Nodes](#) around the world. The work is distilled in the [annual](#) "State of the Future", "Futures Research Methodology" series, special studies, and integrated into its [Global Futures Intelligence System](#).

The Millennium Project

founded in 1996



Purpose

Improve humanity's prospects for building a better future

The Millennium Project

founded in 1996



Mission

Improve thinking about the future and make that thinking available through a variety of media for feedback to accumulate wisdom about the future for better decisions today.

The Millennium Project

founded in 1996



Vision

A global foresight network of Nodes, information, and software, building a global collective intelligence system recognized for its ability to improve prospects for humanity. A think tank on behalf of humanity, not on behalf of a government, or an issue, or an ideology, but on behalf of building a better future for all of us.

What we do



The Millennium Project

- 1 On-going assessment of what are the most significant long-range issues and opportunities, as well as focused analysis of policies and agencies to address them;
- 2 Communications network of futurists and scholars with an international information system of futures research that provides public access;
- 3 The annual State of the Future report (based on an integration of others' forecasts and the Project's own work, and built on the foundation of the previous years' reports)
- 4 Advanced training in the methodology and analysis of critical issues, opportunities, and challenges of the future.
- 5 Special studies such as Future Issues of Science and Technology, Futures Research Methodology, Middle-East Peace Scenarios, Environmental Security, Education and Learning to the year 2030, Future Global Ethical Issues, Lessons and Questions from History, and Future of Africa;
- 6 On-line Global Futures Intelligence System connecting all our research, Nodes, software, methods, and going projects.

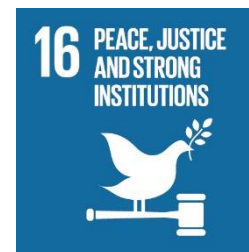
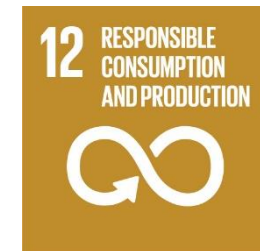
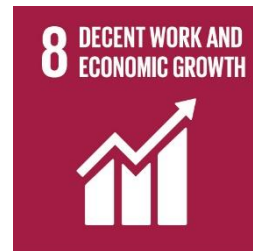


SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



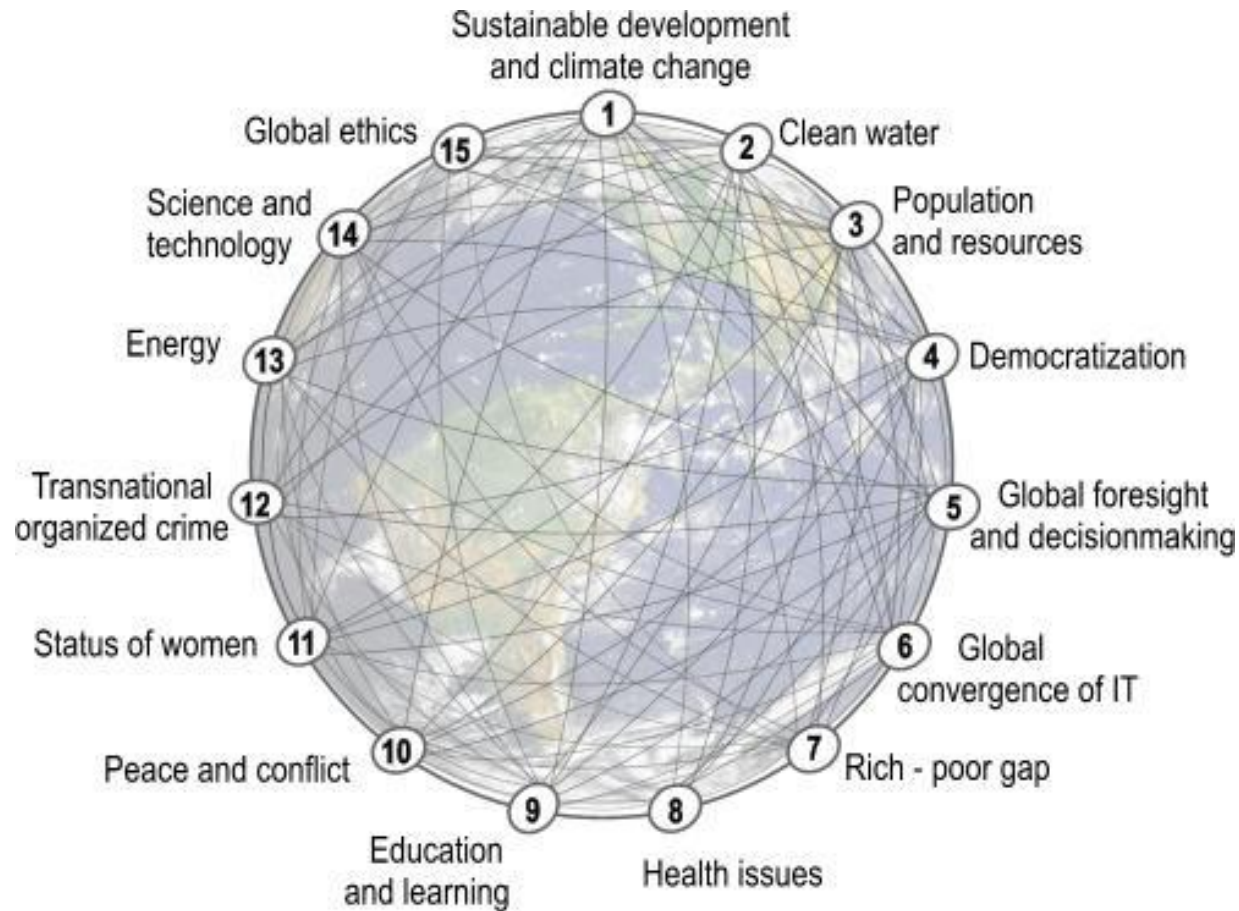
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15 Global Challenges



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15 Global Challenges



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1 Sustainable Development and Climate Change

2 Clean Water

3 Population and Resources

4 Democratization

5 Global foresight and Decision making

6 Global convergence of IT

7 Rich poor Gap

8 Health Issues

9 Education and Learning

10 Peace and Conflict

11 Status of women

12 Global Transnational Organized Crime

13 Energy

14 Science and Technology

15 Global Ethics

15 Global Challenges



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1 How can sustainable development be achieved for all while addressing global climate change?

2 How can everyone have sufficient clean water without conflict?

3 How can population growth and resources be brought into balance?

4 How can genuine democracy emerge from authoritarian regimes?

5 How can decision making be enhanced by integrating improved global foresight during unprecedented accelerating change?

6 How can the global convergence of information and communications technologies work for everyone?

7 How can ethical market economies be encouraged to help reduce the gap between rich and poor?

8 How can the threat of new and reemerging diseases and immune micro-organisms be reduced?

9 How can education make humanity more intelligent, knowledgeable, and wise enough to address its global challenges?

10 How can shared values and new security strategies reduce ethnic conflicts, terrorism, and the use of weapons of mass destruction?

11 How can the changing status of women help improve the human condition?

12 How can transnational organized crime networks be stopped from becoming more powerful and sophisticated global enterprises?

13 How can growing energy demands be met safely and efficiently?

14 How can scientific and technological breakthroughs be accelerated to improve the human condition?

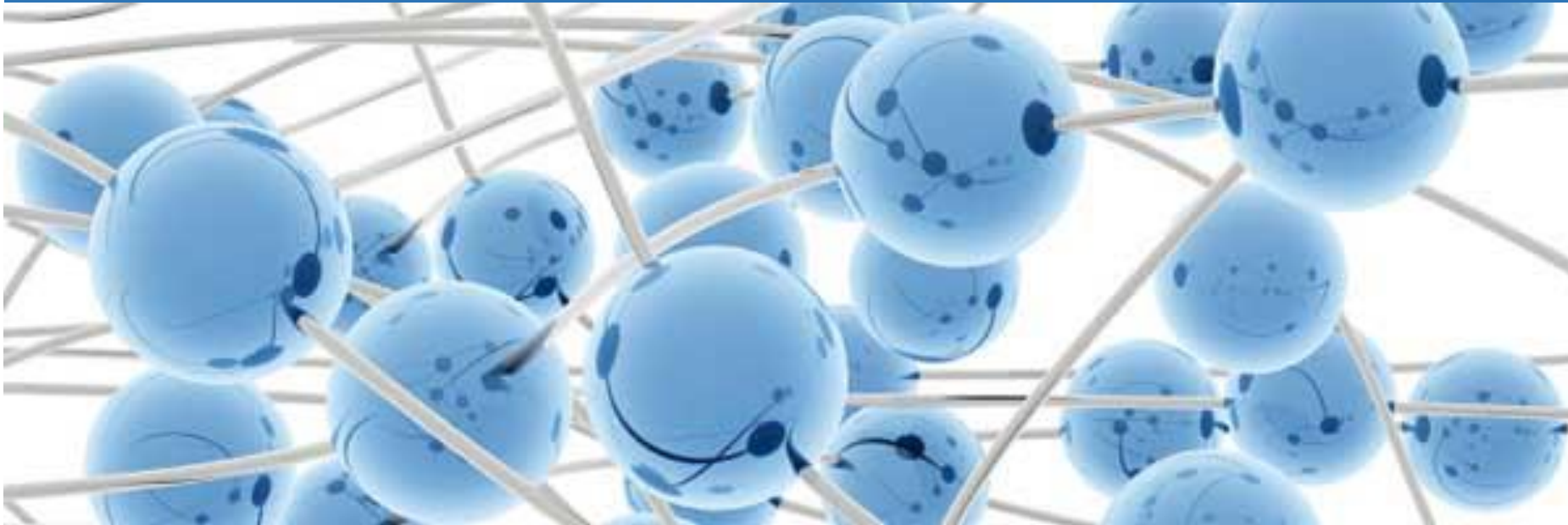
15 How can ethical considerations become more routinely incorporated into global decisions?

15 Global Challenges



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Some key Indicators by challenge



01 – Sustainable Development and Climate Change



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How can sustainable development be achieved for all while addressing global climate change?



Composite indicator of levels of economic growth, infant mortality, life expectancy, and living standards

Average annual global temperature

CO2 emissions and other energy related air pollutants, by source

Reserves of petroleum and key minerals

Number of countries and companies that use ISO 14000 and 14001

Total and per capita energy consumption by type of user

01 – Sustainable Development and Climate Change

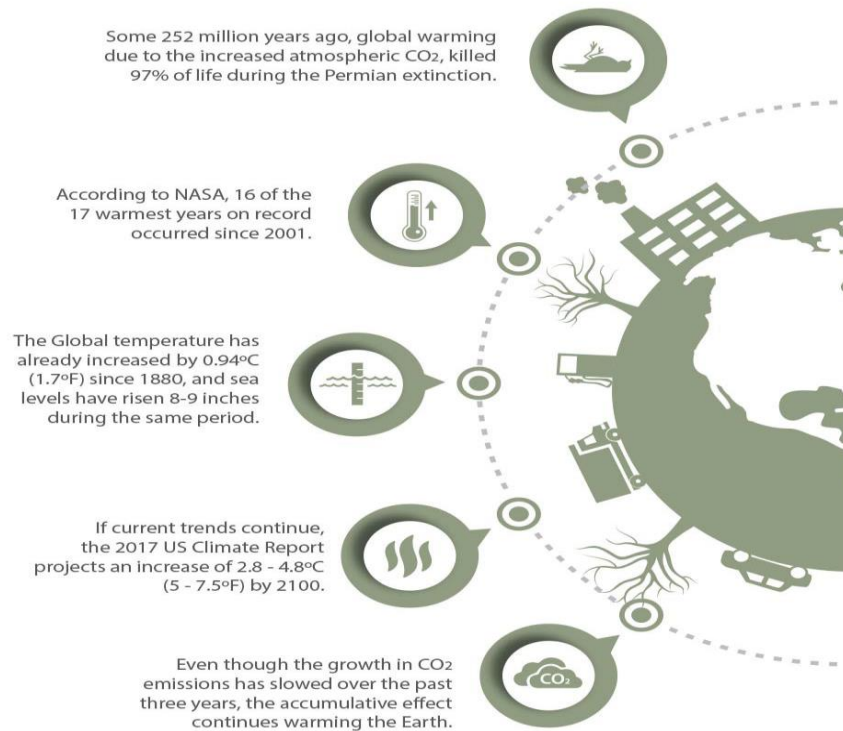


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GLOBAL CHALLENGE 1

How can sustainable development be achieved for all while addressing global climate change?



Actions to Address Global Challenge 1:



We must learn how to turn around the growing greenhouse gas emissions and reduce the volume already in the atmosphere today.



02 – Clean Water



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How can everyone have sufficient clean water without conflict?



Percent of population in the world by country and by region sufficiently supplied with clean drinking water

Percentage of drip agriculture versus other forms

Percentage of drip agriculture versus other forms

Cost of pure water

Funds allocated for water desalination research and development

Percentage of waste water that is treated before discharge

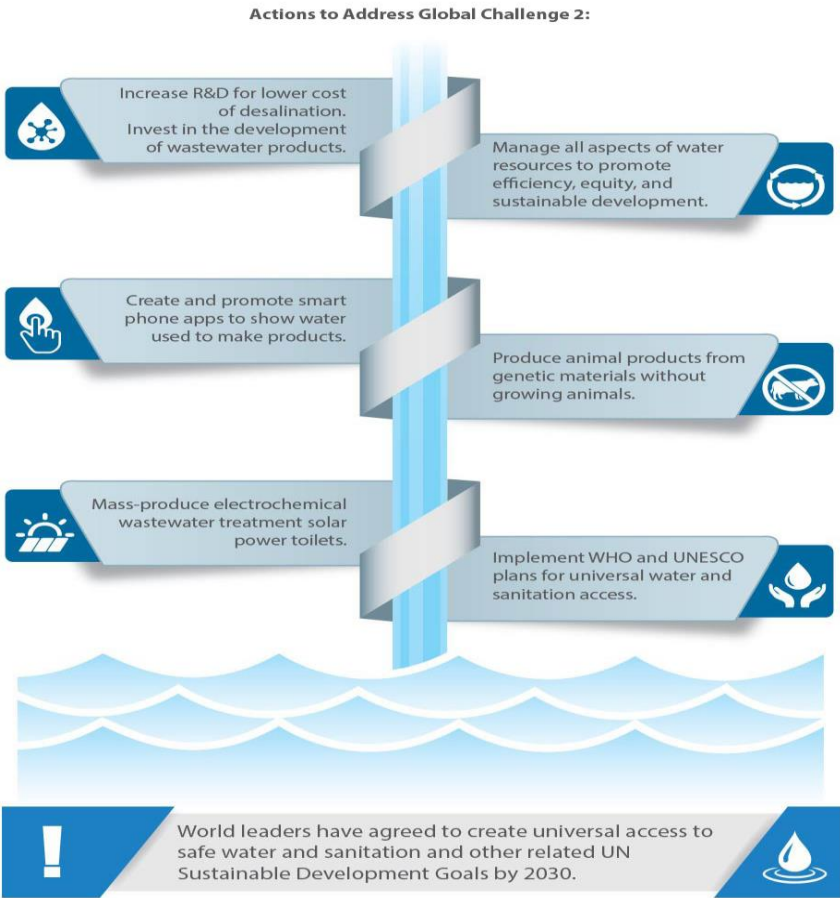
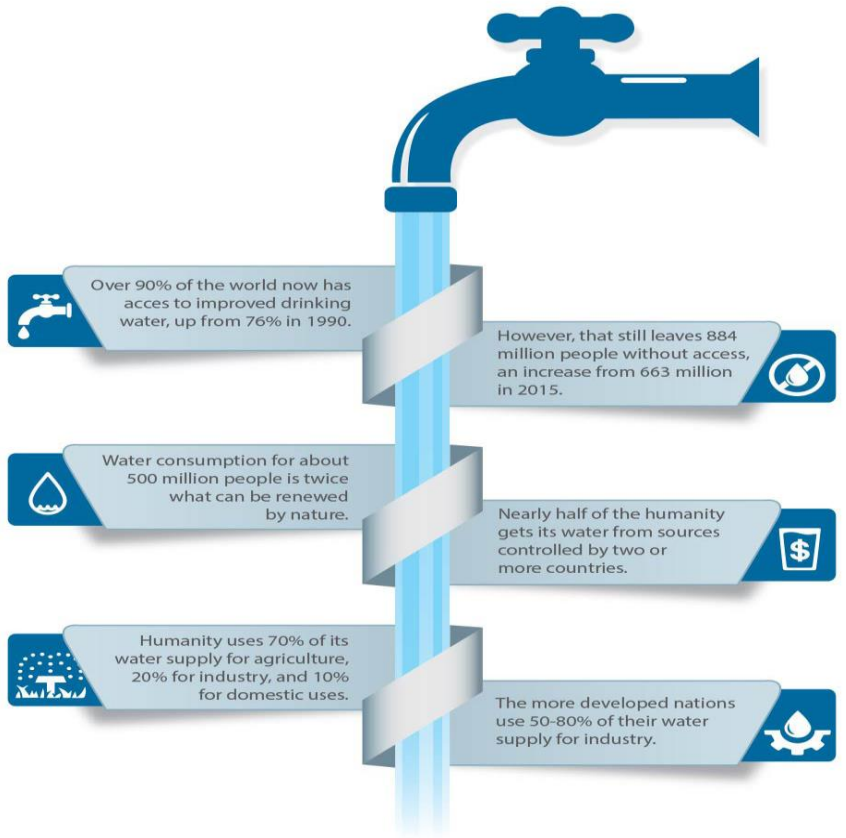
02 – Clean Water



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2

GLOBAL CHALLENGE 2
How can everyone have sufficient clean water without conflict?



03 – Population and Resources



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How can population growth and resources be brought into balance?



Demographic measures: e.g. population growth and fertility rates

Levels of urbanization and population density

Per capita health measures: doctors, nurses and other health service providers

Female literacy and access by women to education, communications and credit

Resources available (quantity and quality) per capita per region

Per capita consumption of various resources

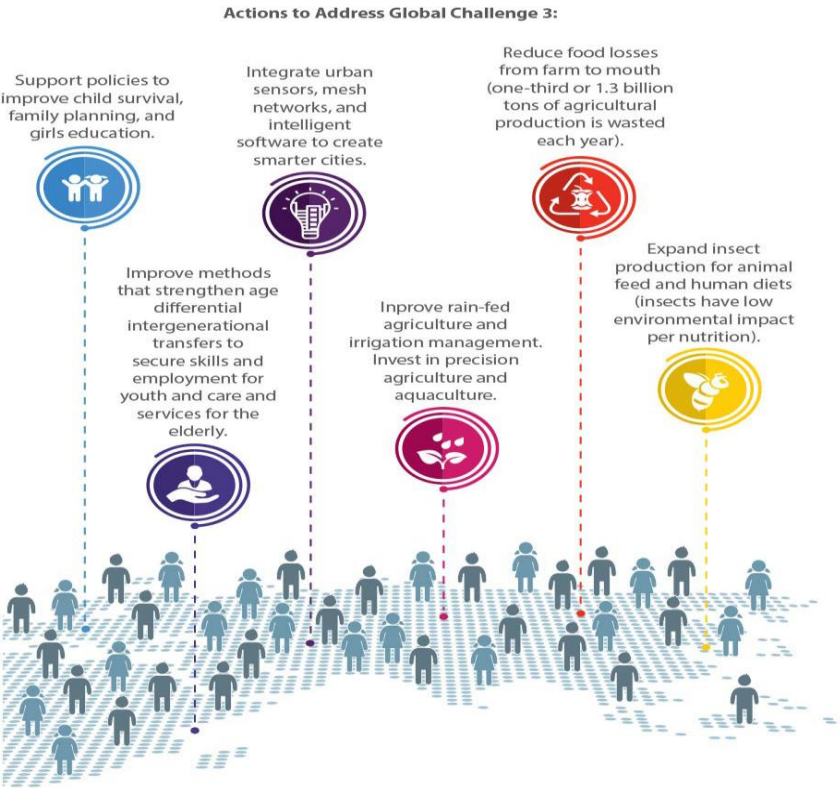
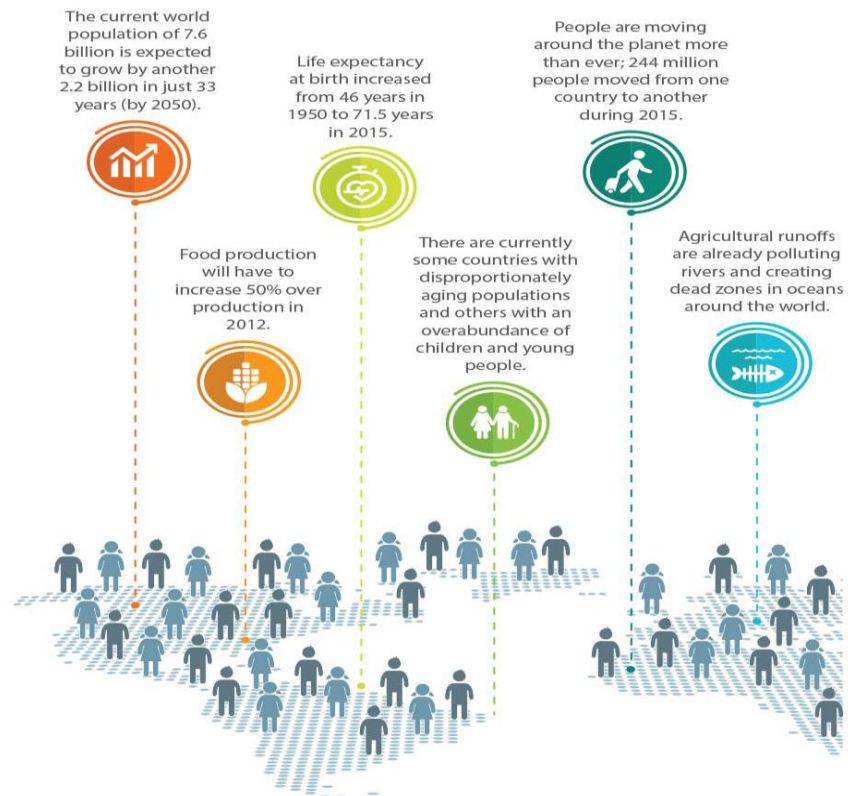
03 – Population and Resources



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GLOBAL CHALLENGE 3
How can population growth and resources be brought into balance?



Unless agriculture and food production change, the environmental impacts of feeding another 2.2 billion people by 2050 will be devastating.

04 – Democratization



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How can genuine democracy emerge from authoritarian regimes?



Percentage of people voting during elections

Voter participation in and frequency and quality of free elections

Percentage of people voting for extreme, non-democratic parties

Rates of economic development

Freedom of expression, as measured by the number and circulation of independent media

OECD democracy index, which allows immediate comparison among countries.

04 – Democratization



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4 How can genuine democracy emerge from authoritarian regimes?



Actions to Address Global Challenge 4:



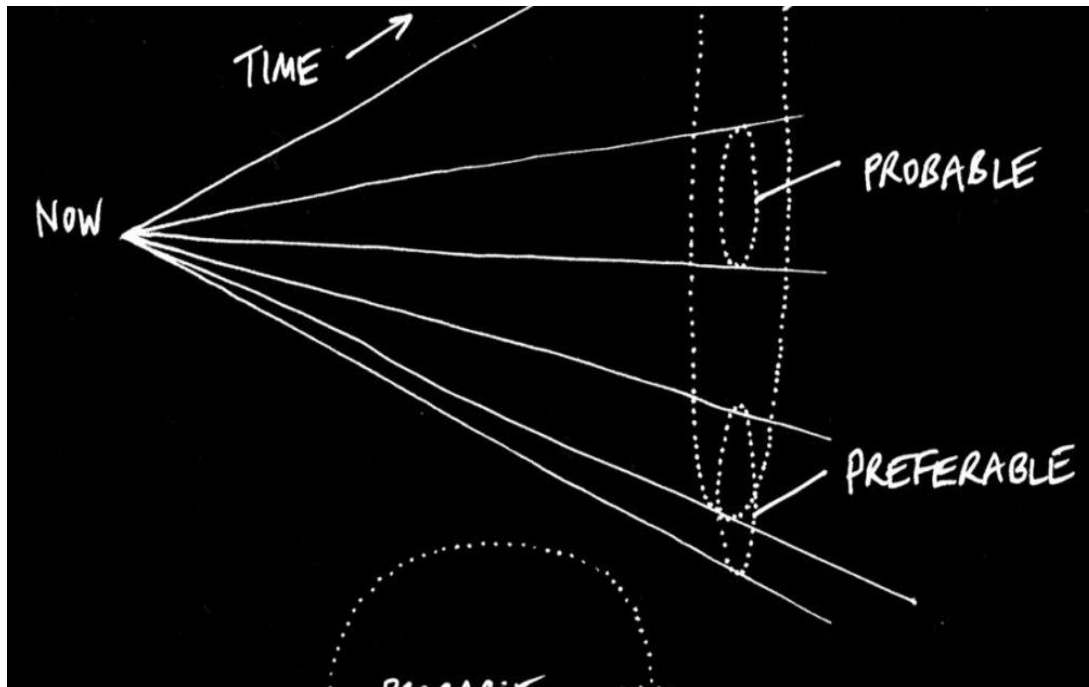
It is generally accepted that democracy is a relationship between a responsible citizenry and a responsive government that encourages participation in the political process and guarantees basic rights.

05 – Global foresight and Decision making



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How can decision making be enhanced by integrating improved global foresight during unprecedented accelerating change?



Collection of examples of successful use of global, long-term perspectives in policymaking

Ratio of legislation on global issues in national legislatures

Measurement of progress towards goals of Agenda 21

Number of courses offered in colleges and universities on morals, futures and decision-making

Funding of Futures research projects and long-term modeling

Extent of long-range goals in strategic plans of public authorities and private enterprises

05 – Global foresight and Decision making

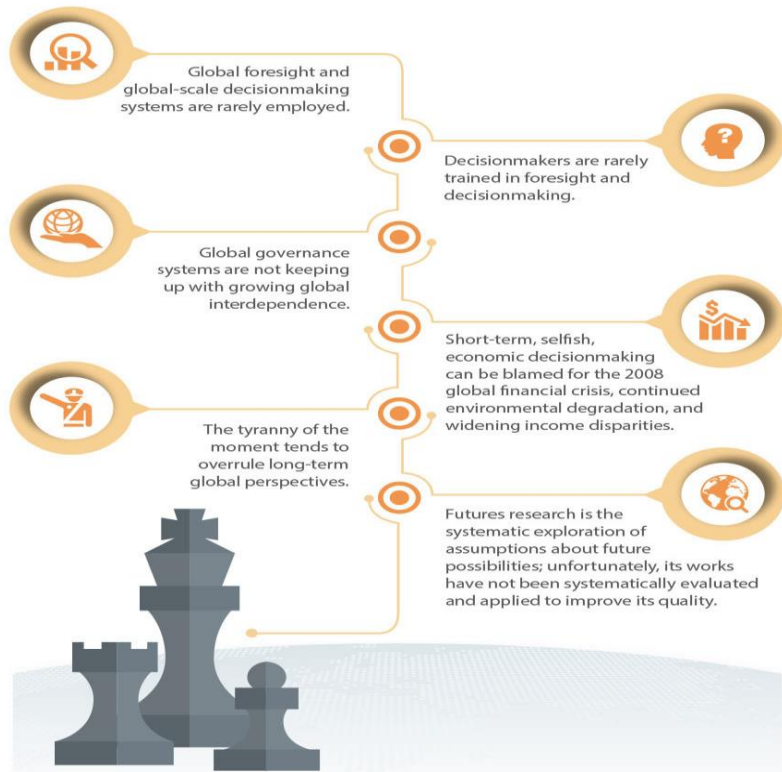


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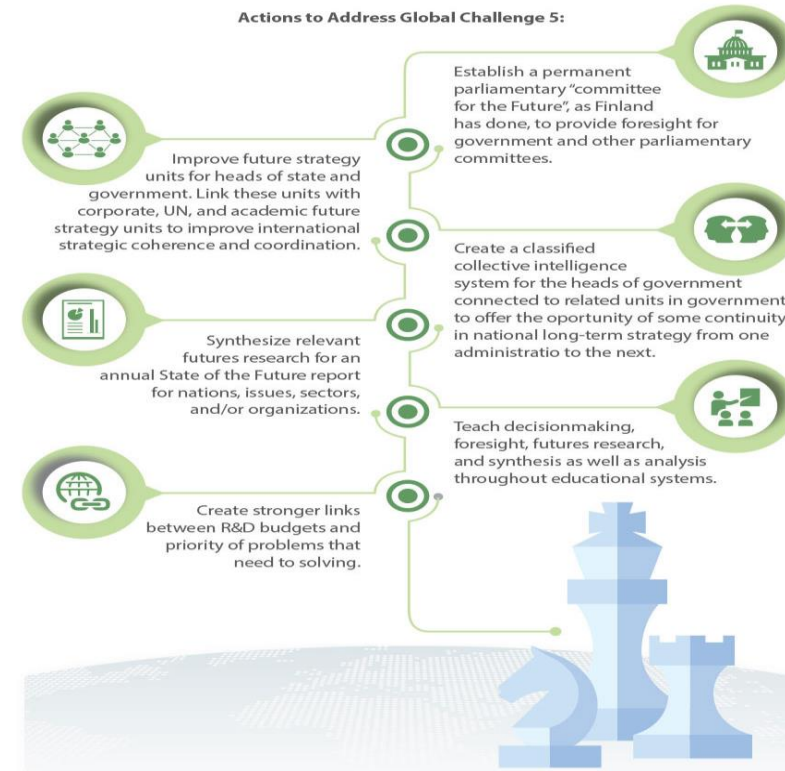
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GLOBAL CHALLENGE 5

How can decisionmaking be enhanced by integrating improved global foresight during unprecedented accelerating change?



Actions to Address Global Challenge 5:



Humanity needs a global, multifaceted, general long-term view of the future with long-range goals to facilitate contemporary decisions that lead to a brighter future.



06 – Global convergence of IT



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How can the global convergence of information and communications technologies work for everyone?



Percentage of people with telephones, TV, computers, and Internet

Number of public libraries with free Internet access

Volume of e-business

Number of students per computer(s)

5. Investments in information/ communication projects that foster local developments

Measures of the state of information and communications technologies
(e.g. average annual Internet user cost, cost of bandwidth, etc.)

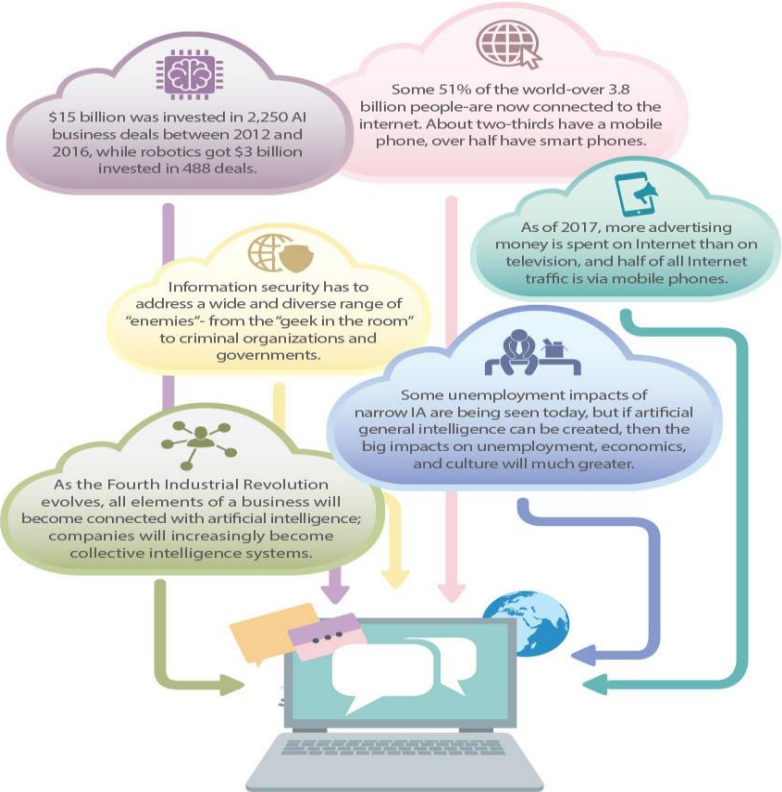
06 – Global convergence of IT



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GLOBAL CHALLENGE 6
How can global information & communications technologies along with machine intelligence, big data, and cloud computing work for everyone?



Actions to Address Global Challenge 6:

Make Internet access a right of citizenship. Support Google's and Facebook's efforts to give universal Internet access to the world, regardless of location.

Explore elements for a global agreement on use and future development of machine learning and use of AI.

Train everyone in their roles in cyber security and stewardship.

Create low-cost hand-held computers with direct satellite access for low-income regions to access educational software and telephony.

Promote tele-nations and tele-citizens: people from poorer nations who live and work in richer nations who help develop their original countries via volunteer telecommuting.

Invent synergies between government cyber security personal and independent hackers for a safer Internet.

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How well governments develop and coordinate Internet security technology and regulations may determine the future quality of cyberspace.

07 – Rich poor Gap



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How can ethical market economies be encouraged to help reduce the gap between rich and poor?



Employment and unemployment statistics

Percentage of people completing various level of education

Measurements of the economic gap between rich and poor

Magnitude of government expenditure on welfare programs
(e.g. labor market intervention and health care)

Migration statistics

Combined indicators of rates of internal saving, investment, internal consumption,
exports, cost of living

07 – Rich poor Gap



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GLOBAL CHALLENGE 7

How can ethical market economies be encouraged to help reduce the gap between rich and poor?



Extreme poverty fell from 51% in 1981 to 13% in 2012 and less than 10% today, mostly due to income growth in China and India.



Inequality in Africa remains a serious threat to future stability, with four of the five most unequal countries in the world found there.



The concentration of wealth is increasing (the wealth of just 8 billionaires equals that of 3.6 billion people, the poorer half of humanity).



AI and other next technologies should lower cost of living, and should provide new tax income from taxing robots and other next technologies, making universal basic income financially sustainable by 2030.



Although income gaps between rich and poor individuals are widening, the gap between nations is expected to narrow.



IMF expects growth of the world economy to increase from 3.1% in 2016 to 3.5% in 2017 and 3.6% in 2018. Given population growth at 1.1%, global income per capita is growing 2.39% annually.



Actions to Address Global Challenge 7:

Poorer regions should be assisted in investing more in developing finished productions for export, extending local value chains, and "leapfrogging" to more advanced technology, instead of relying on exporting commodities.



Promote Decentralized Autonomous Organizations for an unlimited number of peer-to-peer ad hoc "workers".



Tax next technologies for new income to social support systems and create tax systems that ensure big business and wealthy individuals pay their fair share.



Explore alternative transaction systems like blockchain and cryptocurrencies (over 850 cryptocurrencies with \$145 trillion (not billion) market capitalization).



Establish community centers for access and training for self-employed to use advanced technology like 3D printing, AI/robotics, and AI apps.



Give greater attention to the frontiers for work related to the forthcoming biological revolution, which may be as large as or larger than industrial or information revolutions.



World leaders have agreed to the UN Sustainable Development Goal of eliminating extreme poverty by 2030.



08 – Health Issues



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How can the threat of new and emerging diseases and immune micro-organisms be reduced?



Mortality rates by causes

Pandemic frequencies

Number of people vaccinated, by disease and geography, including the percentage paid for by states

Physicians and health care facilities per capita

Frequency and intensity of new infestations/infections

Measurements of AIDS deaths and HIV prevalence

08 – Health Issues



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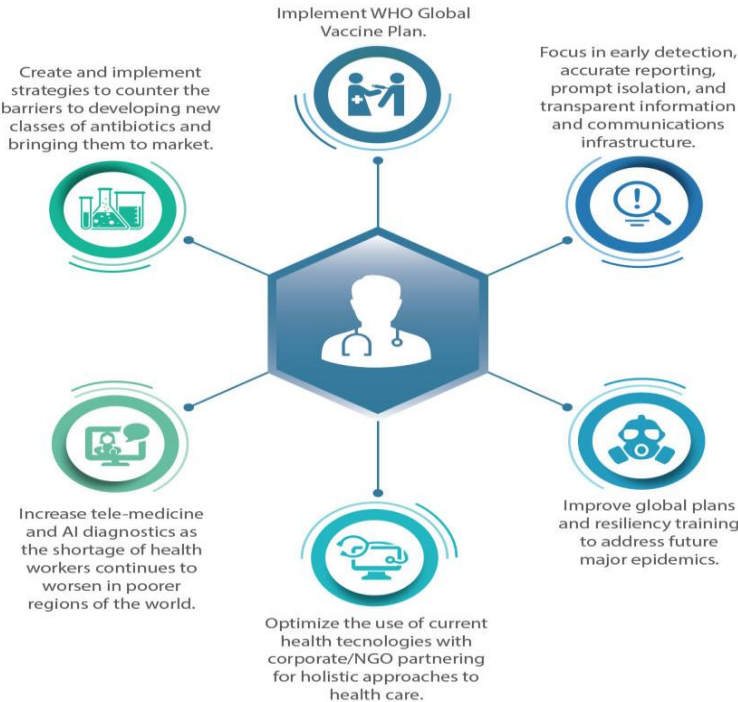
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GLOBAL CHALLENGE 8

How can the threat of new and reemerging diseases and immune microorganisms be reduced?



Actions to Address Global Challenge 8:



Children are receiving the highest level of routine immunization coverage in history.



09 – Education and Learning



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How can education make humanity more intelligent, knowledgeable, and wise enough to address its global challenges?



Number of countries that have “Increasing Intelligence” as a national objective

Percent of the public that access free tele-education and life-long learning systems

Percent schools that have integrated personalized artificial intelligence learning aids

Percent of schools with both STEM and self-paced inquiry-based learning for self-actualization and meaningful working life

National average age when the basics of reading, writing, and numeracy is mastered

Number of secondary schools that teach philosophy, entrepreneurship, and ethics

09 – Education and Learning



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GLOBAL CHALLENGE 9
How can education and learning make humanity more intelligent, knowledgeable, and wise enough to address its global challenges?



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Because technological capacities available to the individual will be far more powerful than in the past, increased attention has to be given to ethics, values, citizen responsibilities, and noble behavior.

10 – Peace and Conflict



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How can shared values and new security strategies reduce ethnic conflicts, terrorism, and the use of weapons of mass destruction?



Measurements of income and wealth distribution; the economic gap between rich and poor

Funding and status of UN permanent peacekeeping capabilities

Number of people killed in conflicts

Number of refugees and displaced persons due to conflict

The number of days of peace and people not killed

Levels of funding for programs that promote respect for diversity and equal rights

10 – Peace and Conflict

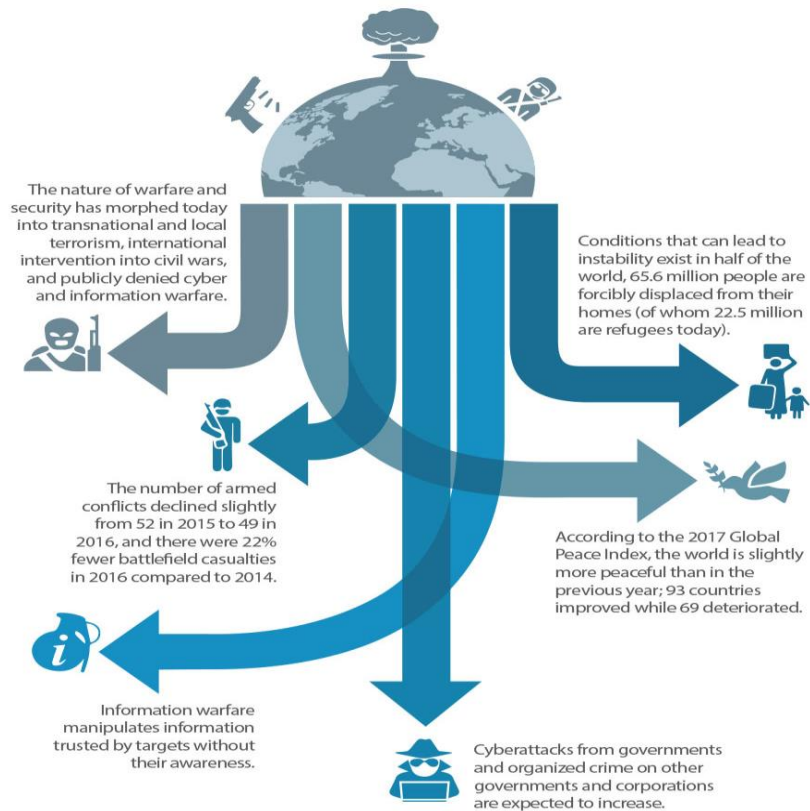


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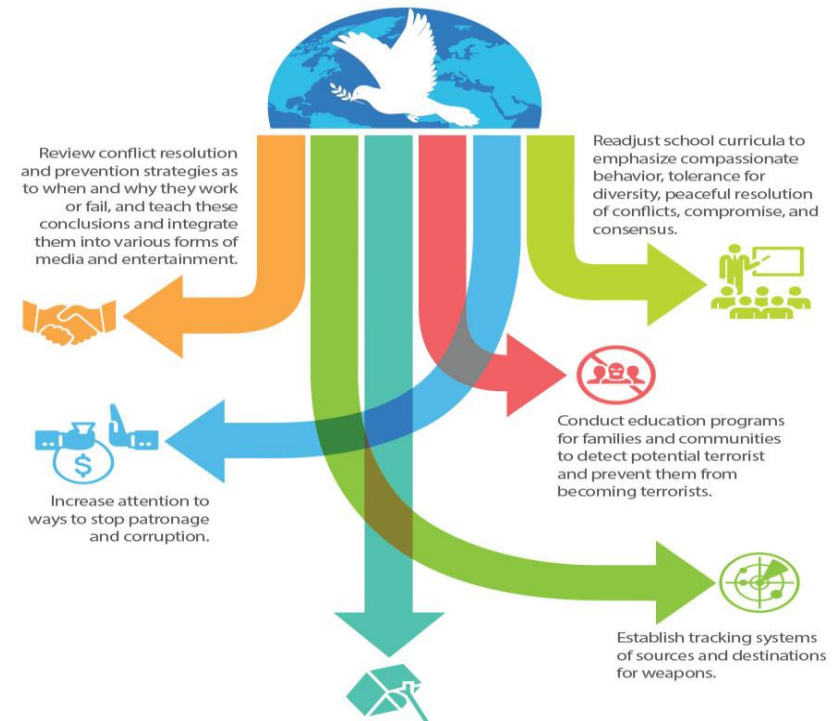
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GLOBAL CHALLENGE 10

How can shared values and new security strategies reduce ethnic conflicts, terrorism, and the use of weapons of mass destruction?



Actions to Address Global Challenge 10:



Some conflict prevention strategies include ensuring that government services are available to all groups, establishing transparent and accountable governance.

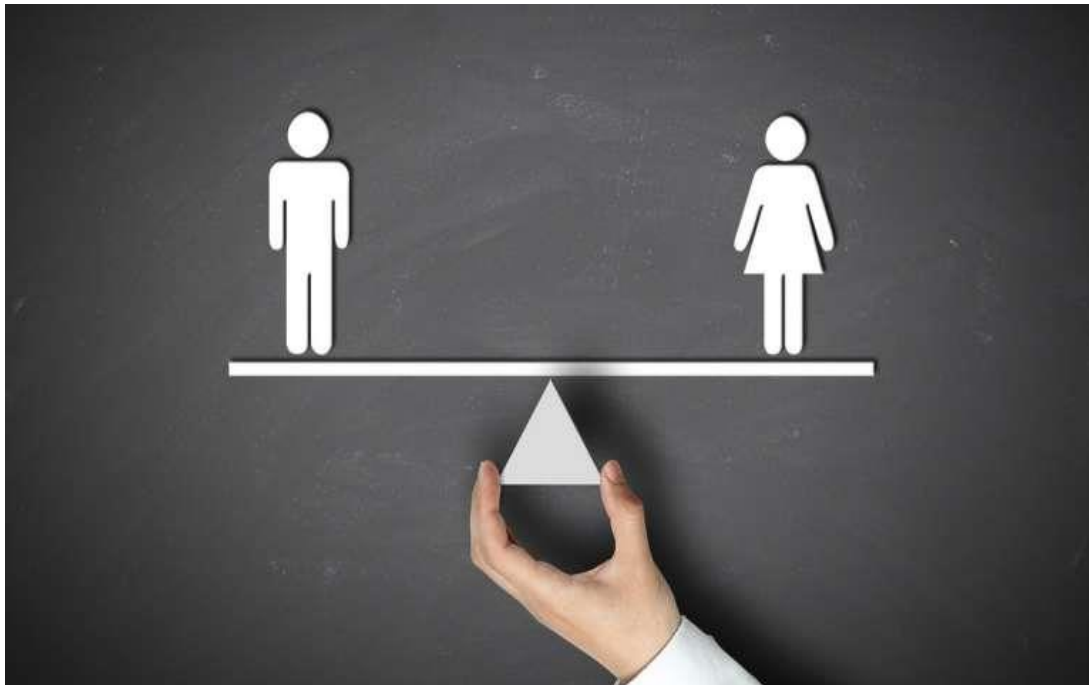


11 – Status of Women



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How can the changing status of women help improve the human condition?



Female literacy and access by women to education, communications and credit

Number of women and children in poverty

Assessments of the effectiveness of family planning programs

Comparison of pay for similar work by men and women

Number of women in international, national, regional, state and local government; % of women in policy making and decision making

Ratio of women to men in various occupations and management levels

11 – Status of Women



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11

GLOBAL CHALLENGE 11

How can the changing status of women help improve the human condition?



Actions to Address Global Challenge 11:



Empowerment of women has been one of the strongest drivers of social evolution over the past century and is acknowledged as essential for addressing all the global challenges facing humanity.



12 – Global Transnational Organized Crime



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How can transnational organized crime networks be stopped from becoming more powerful and sophisticated global enterprises?



Number of countries adopting internationally consistent laws and regulations against organized crimes

Crime and gambling statistics

Statistics relating to illegal drugs and prostitution

Value of confiscated drugs and contraband

Number of institutions and individuals identified, arrested, and prosecuted as related to organized crimes

Apprehension and seizures of weapons

12 – Global Transnational Organized Crime

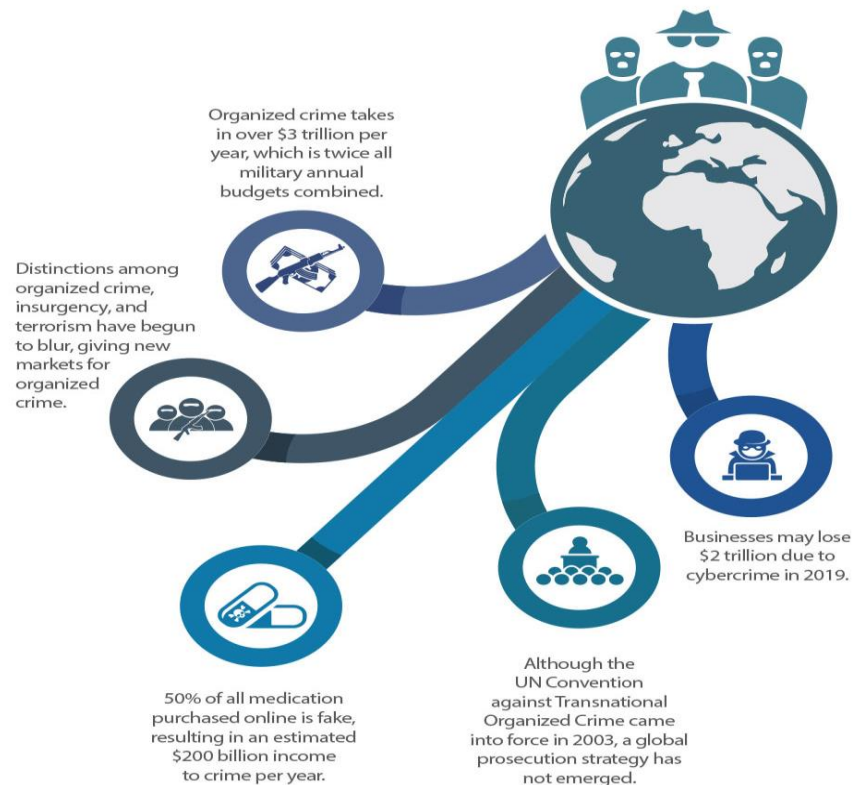


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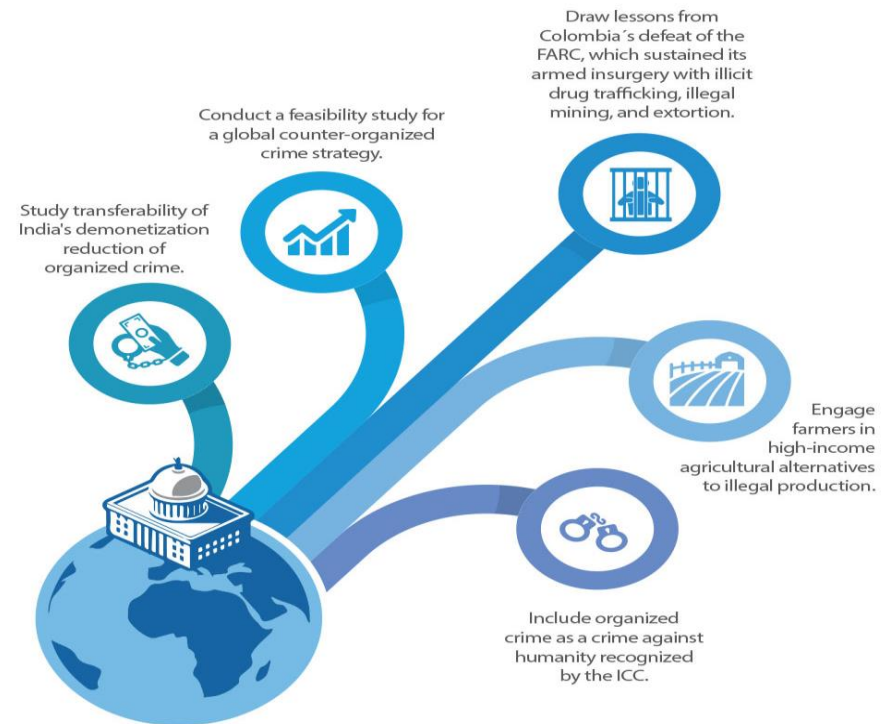
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GLOBAL CHALLENGE 12

How can transnational organized crime networks be stopped from becoming more powerful and sophisticated global enterprises?



Actions to Address Global Challenge 12:



A financial prosecution system could be established as a new body to complement the related organizations addressing various parts of transnational organized crime today.



13 – Energy



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How can growing energy demands be met safely and efficiently?



Energy/GDP ratio

Total and per capita energy usage by category of source (fossil, solar, nuclear, etc.)

Energy production by source, including particularly the amount generated by fossil, hydro, nuclear and alternate energy sources (e.g. wind, solar)

Total and per capita energy consumption by type of user

Transportation energy by source (petroleum, natural gas, electricity, etc.)

Number of nuclear plants waiting to be closed

13 – Energy

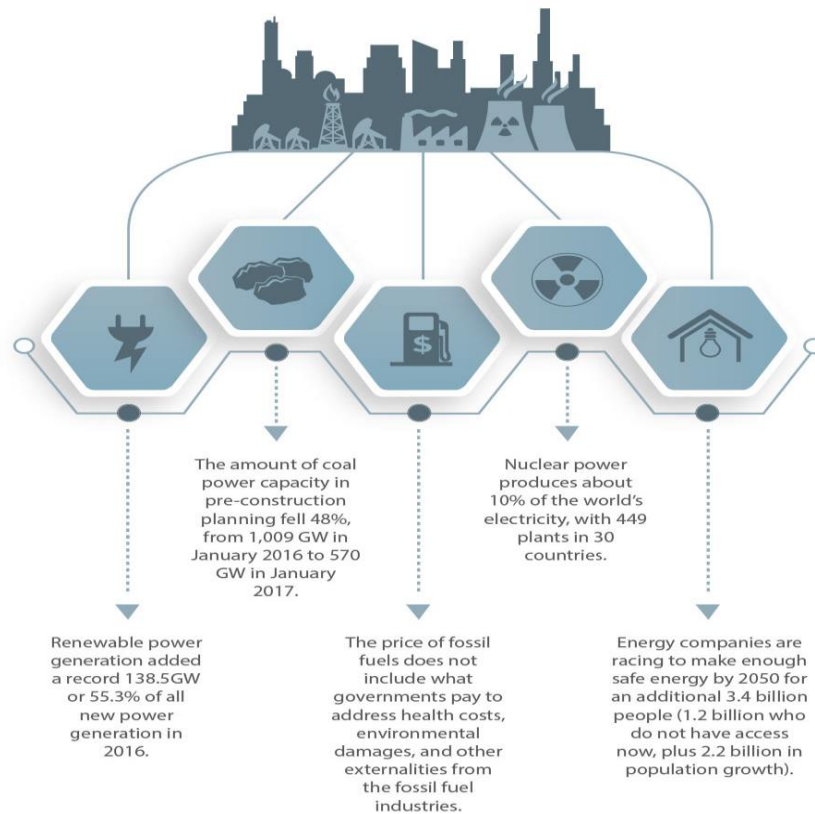


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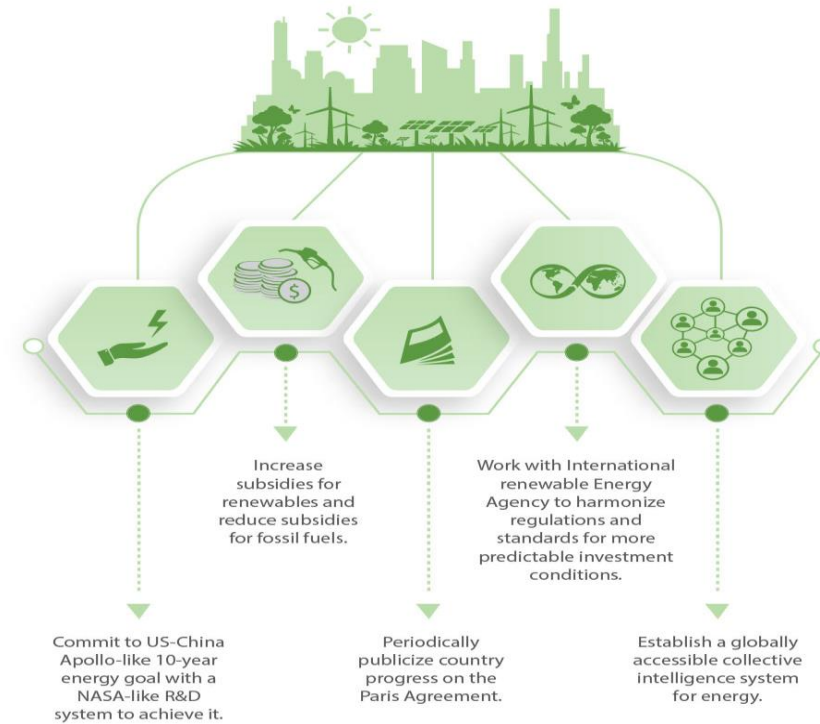
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GLOBAL CHALLENGE 13

How can growing energy demands be met safely and efficiently?



Actions to Address Global Challenge 13:



The Paris Agreement is expected to reduce fossil fuel consumption and increase renewable sources of energy.



14 – Science and Technology



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How can scientific and technological breakthroughs be accelerated to improve the human condition?



Investments in R&D by governments and companies, counting expenditures in areas including solar, health; in a) absolute terms, b) percentage of GDP, and c) per capita

Number of researchers and percentage, by field and country

Extent of international scientific collaboration

Number of scientists having papers in well-known publications in the world; number of papers published on international journals each year

Number of patents in selected fields

Standard of life indicators (public health, reduced number of working days, aged population socially active, etc.)

14 – Science and Technology



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14

GLOBAL CHALLENGE 14

How can scientific and technological breakthroughs be accelerated to improve the human condition?



China has demonstrated quantum entanglement between an orbital satellite and Earth and is creating a quantum communication network between Beijing and Shanghai.

International R&D spending is forecast to be 1.71% of global GDP in 2017, while the U.S. and South Korea forecast 2.83% and 4.29% of their GDP respectively.

As of June 2017, China's TaihuLight (93 petaflops) and Tianhe-2 (33.9 petaflops) are the two fastest computers, followed by Switzerland's Piz Daint (19.6 petaflops).

Computer-mediated elementary brain-to-brain communications have been demonstrated.

New combinations and manipulations of genetic molecules and life forms will be developed to create the biological revolution.

E-waste pollution is growing worldwide, with the potential to poison groundwater



Actions to Address Global Challenge 14:

Establish some kind of international S&T organization to improve the human condition more as an online public access global collective intelligence system rather than as an intergovernmental body like UNESCO.

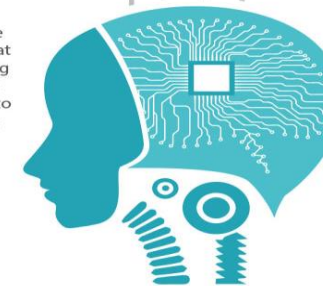
Create global means to link research agendas to human needs and threats.

Encourage scientist to take an oath similar to the Hippocratic Oath taken by physicians to "do no harm".

Support research to prevent future artificial super intelligence evolving against human interests.

Pass laws to prosecute "patent trolls" (firms that don't produce anything but simply file patent lawsuits for extortion) to drop deceitful patent law cases.

Explore ways to limit materials and S&T information that can be used by individuals for destructive purposes.



The speed of scientific breakthroughs and technological applications to improve the human condition is being accelerated by computational science and engineering.



15 – Global Ethics



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How can ethical considerations become more routinely incorporated into global decisions?



Voter participation in and frequency and quality of free elections

Extent of coverage in local papers, radio and TV news on ethical issues

Number and type of terrorists incidents and ethnic conflicts

Measurement of the level of non-state actors in global institutions, notably for religious bodies (e.g. Churches) and charities (e.g. Oxfam) in UN, EU and other global and regional organizations

Social capital indicators like: the quantity of citizens' organizations and initiatives; quality of citizens' activities in `ethical terms; ethical atmosphere in terms of trust and global ethics

Extent of training in conflict resolution and ethics being provided in schools, universities, government, and business

15 – Global Ethics

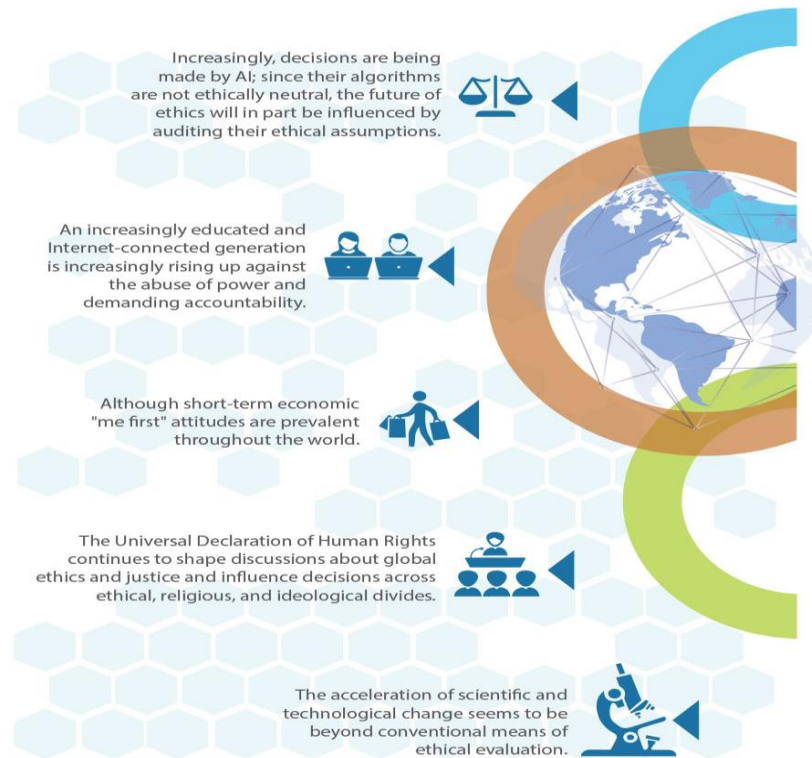


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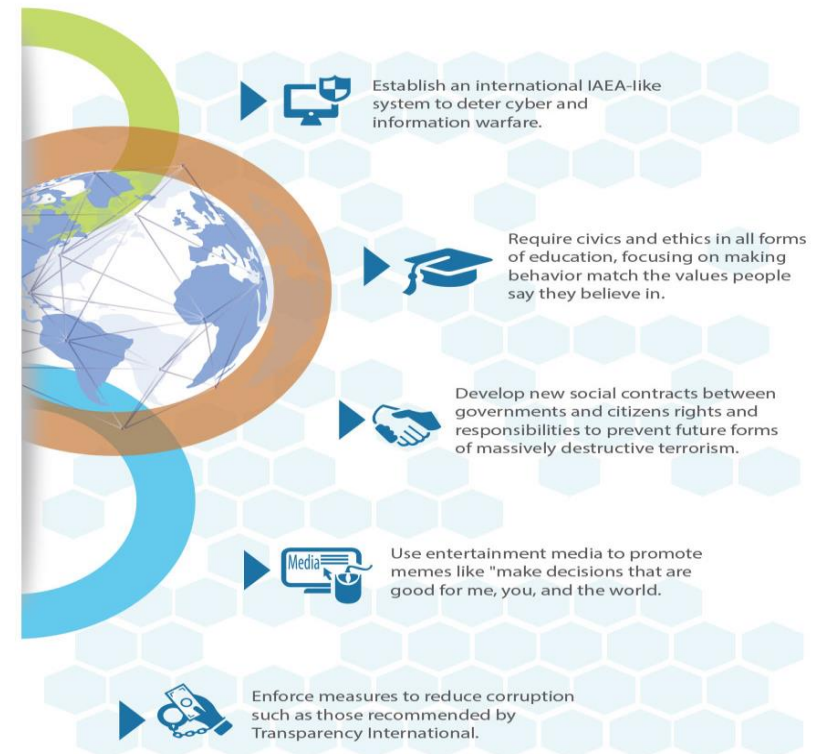
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GLOBAL CHALLENGE 15

How can ethical considerations become more routinely incorporated into global decisions?



Actions to Address Global Challenge 15:



Technologies accessible to individuals, organizations, and governments have become too powerful and diverse to allow the growth of unethical behavior.





“

The ***State of the Future*** is an informative publication that gives invaluable insights into the future for the United Nations, its Member States, and civil society. ”

Ban Ki-moon, Former Secretary-General of the United Nations

Global Futures System



The Millennium Project

The Millennium Project

A global foresight network of nodes, information, and software.

Functioning as a think tank **on behalf of humanity**, not on behalf of a government, an issue, or an ideology.

Created to improve humanity's prospects **for building a better future.**



Millennium Project Nodes



Cyberspace



Arts & Media





The Millennium Project

BRING A BETTER FUTURE FOR HUMANITY



The Millennium Project