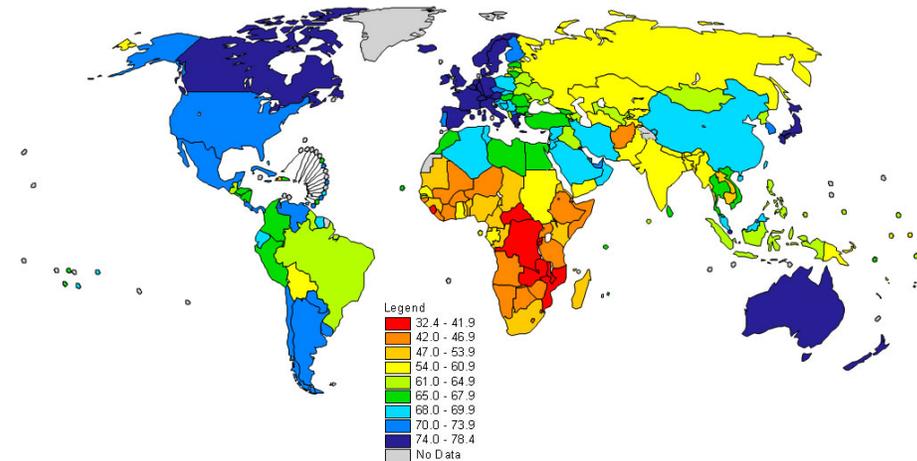


Outline

- Health is a recognized measure of sustainable development.
- Health indicators of progress on a green economy are:
 - Science-based
 - People-focused and holistic
 - Easily measured
- Need to pioneer health indicators of sustainable development in key green economy themes
 - Sustainable energy
 - Cities
 - Agriculture/Nutrition
- Mobilizing the public



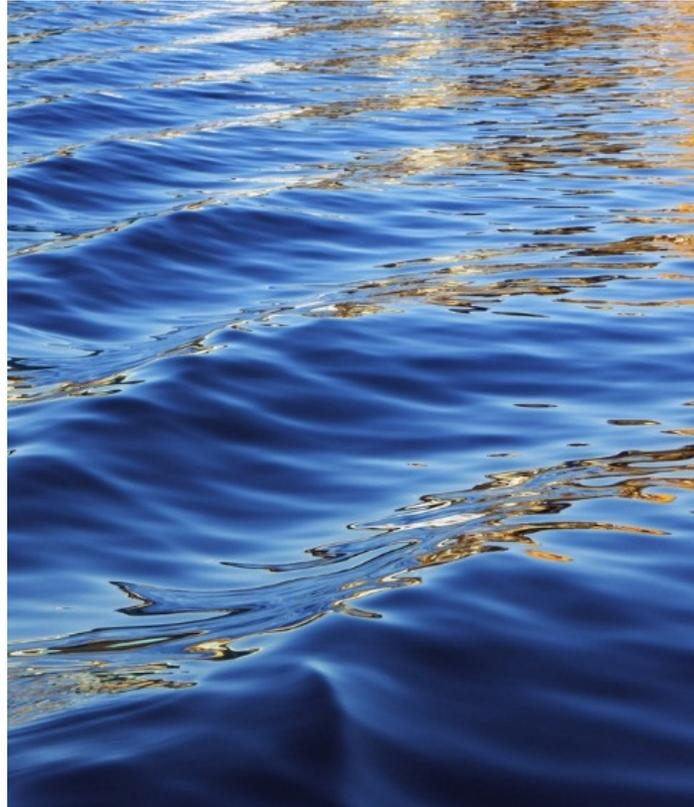
Importance of Health Indicators

- Health indicators can tell us how well we are advancing sustainable development. For instance, if air pollution is reduced, then chronic respiratory and cardiovascular disease will likely decline. Choosing the right indicators of healthy development is important to measuring progress that is meaningful to human wellbeing.





**Why Should we use
Health as a measure of
a sustainable
development future?**



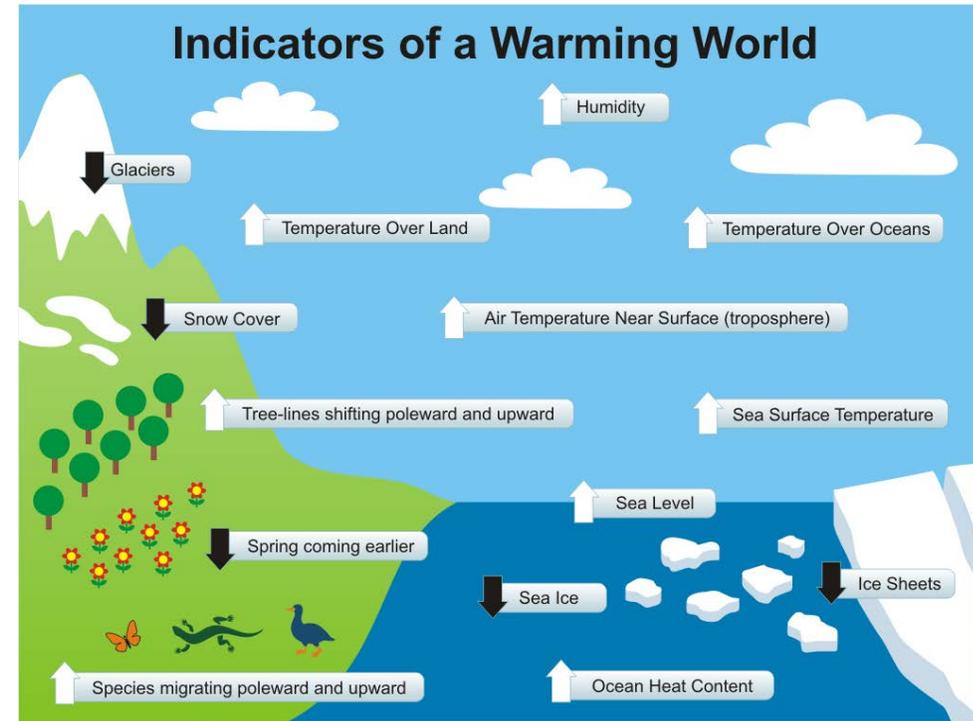
Health as a measure of the sustainable development future

- Health is a precondition for sustainable development.
- Better health can result from green economic strategies, but only if health is considered in the planning and implementation.



Health indicators must be science-based

- Empirical evidence of environment /ecosystem risks and health impacts.
- Large epidemiological studies of population impacts in real settings.
- Rigorous systematic review of a wide body of knowledge.



Examples of Associated Health Risks

- **Higher temperatures**
 - UV radiation exposure leads to increased skin cancer rates
 - Mortality from heat-stress
 - Increased food-borne illness
 - Bacterial contamination of recreational bathing water
- **Colder temperatures**
 - mortality
- **Changes in sea and ground water levels**
- **Flooding and Storms**
 - Injury, drowning
 - Infectious disease
 - Vector-borne disease
 - Respiratory problems (mold, mildew)
 - Chemical exposure
 - Food-borne illness (example, from contaminated food)



Examples of Associated Health Risks, continued

- **Air quality (due to ozone)**
 - **Respiratory problems**
- **Pollution incidents**
 - **Waste management sites specifically identified**
- **Drought & water scarcity - Precipitation (rain & snow)**
 - **Impact on gardens and crops could impact nutrition**
- **Changes in species habitat & distribution**
 - **Vector-borne disease**
 - **Infectious disease**

Example: Disease burden from unsustainable urban transport (per annum)

- Outdoor urban air pollution → 1.3 million deaths/ cardiovascular and respiratory disease.
- Physical inactivity → 3.2 million deaths and 19 million healthy life years lost.
- Traffic Injuries → 1.3 million deaths.
- Traffic noise → stress, memory loss and analytical impairment.
- Climate change → over 150,000 deaths/year mostly from under-nutrition and extreme weather. 34% of CO₂ emissions from land transport and housing.
- Access to vital goods and services, social networks/ equity/cohesion → profound and under reported.

Example: Chronic Obstructive Pulmonary Disease (COPD) and Childhood pneumonia deaths/disease from air pollution

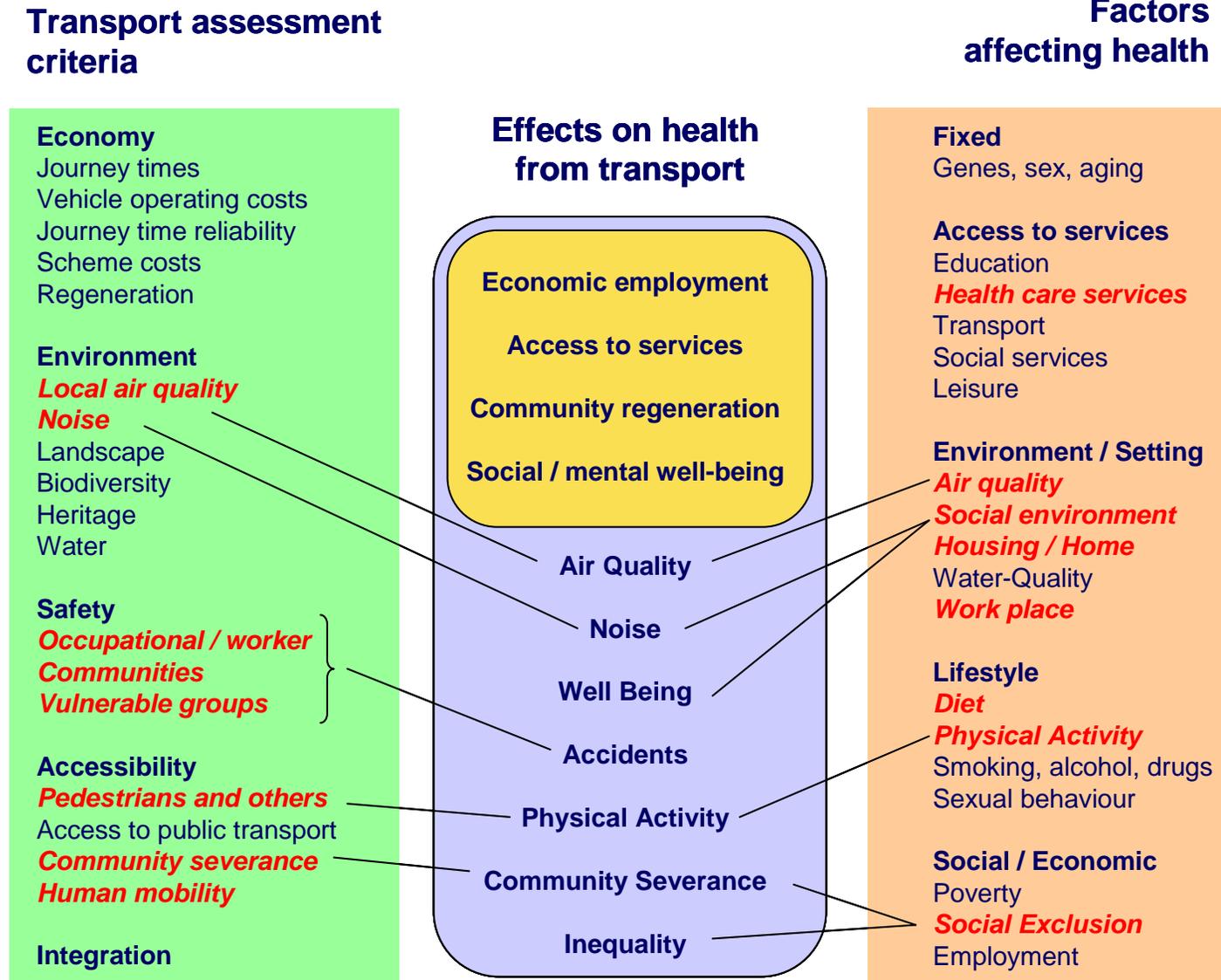
- No. of households using solid fuels for cooking and heating 
 - **Indoor air pollution levels X No. of people exposed** 
 - Pneumonia in children
 - Chronic respiratory disease in mothers and children
- No. of coal fired power plants in use and No. of motorized vehicles 
 - **Outdoor air pollution levels X No. of people exposed** 
 - Cardiovascular disease
 - Respiratory disease

Health Indicators are people-focused, but also comprehensive

- Health is a “litmus test” for green economy strategies that yield the optimal sustainable development results in social, economic, and environmental dimensions.

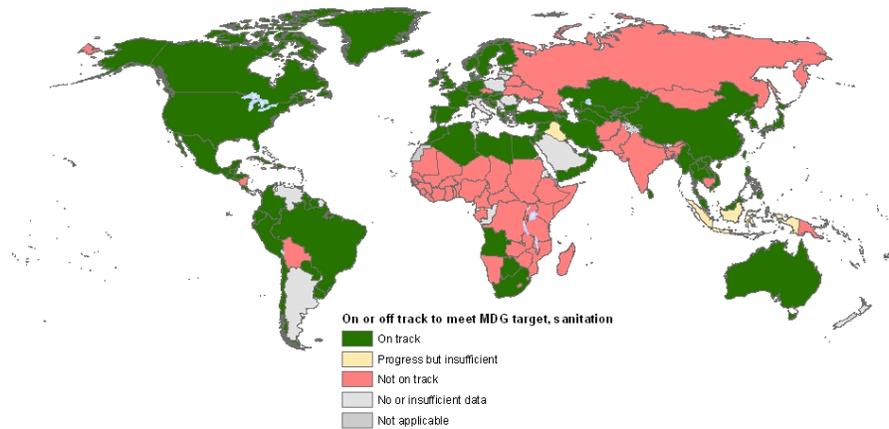


Example: Transport health indicators link economic, environment, and social aspects



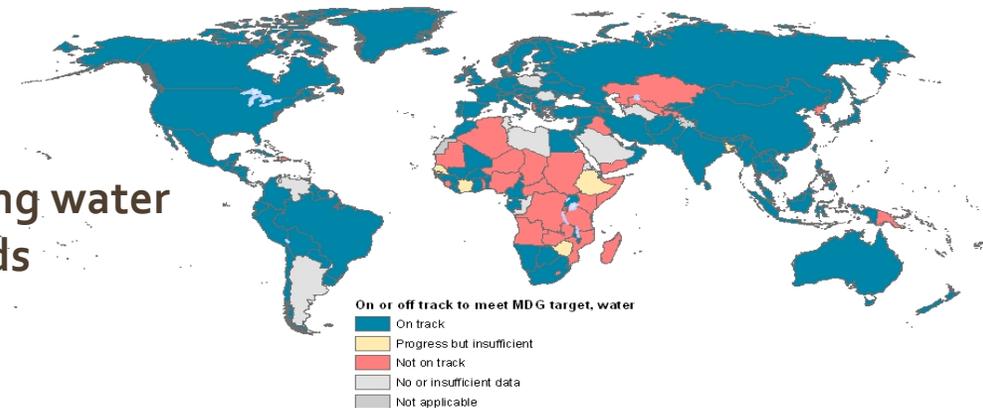
Watkiss et al, 2003)

Example: WHO/UN Millennium Development Goal 7 – Reducing the number of people without sustainable access to safe drinking water and basic sanitation



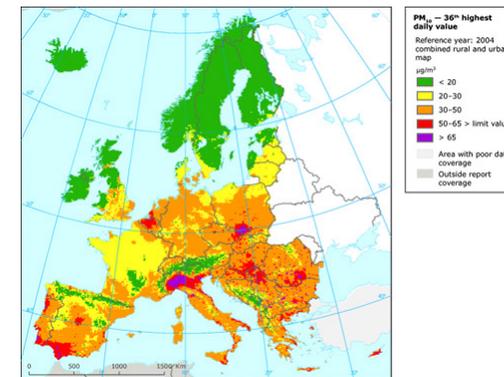
- World unlikely to meet target
- 2.4 billion (1/3 of world's population) without access to improved sanitation in 2015
- 1.1 billion defecate in open
- 44 countries <50%

- World met target in 2010, but...
- 768 million without improved sources for drinking water
- 185 million relied on surface water for daily needs
- 7 countries <50%



Health indicators use readily available data/tools: An example, air quality measures

- The air we breathe can be contaminated by emissions from motor vehicles, industry, heating and commercial sources (outdoor), as well as tobacco smoke and household fuels (indoor).
- A recent study using data from 25 cities in the European Union has estimated that life expectancy could be increased by up to approximately 22 months in the most polluted cities if the long-term PM_{2.5} concentration was reduced to the WHO guideline annual level.
- Some 40 million people in the 115 largest cities in the European Union (EU) are exposed to air exceeding WHO air quality guideline values for at least one pollutant. Children living near roads with heavy-duty vehicle traffic have twice the risk of respiratory problems as those living near less congested streets.



WHO Global Health Observatory Data



- **World Health Statistics**

WHO's annual compilation of data from its 194 Member States, including a summary of progress towards the health-related Millennium Development Goals and Targets.



- **Tracking universal health coverage: First global monitoring report**

Presents the data available to monitor universal health coverage, including coverage of selected interventions and financial protection.



- **State of inequality: Reproductive, maternal, newborn and child health**

Demonstrates best practices in reporting the results of health inequality monitoring, and introduces innovative ways for audiences to explore inequality data.



- **Women and health: today's evidence tomorrow's agenda**

Comprehensive evidence on the specific health challenges and needs of women across the life course.



- **Global health risks**

Comprehensive, consistent and comparable statistics and information on health risks at global and regional levels.



- **The global burden of disease: 2004 update**

Comprehensive, consistent and comparable information on the burden of diseases and injuries at global and regional levels.

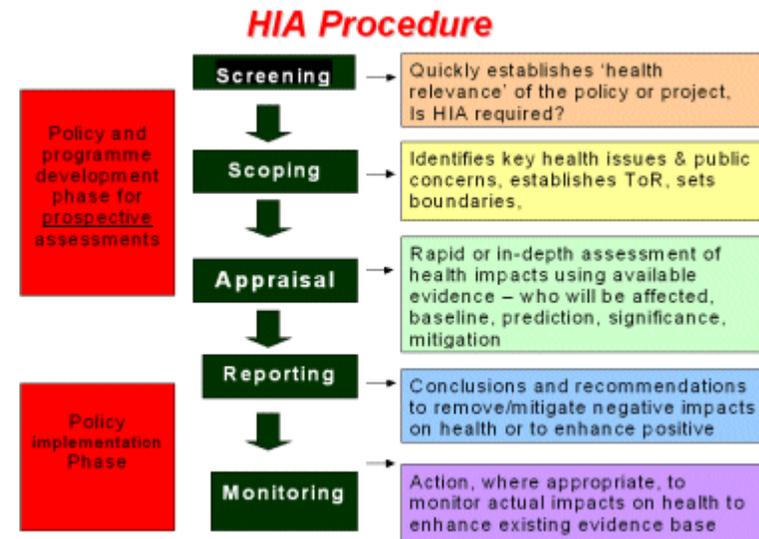
Evidence-based indicators of Sustainable Development, what WHO is pioneering

- Key areas include:
 - Energy
 - Sustainable Cities
 - Agriculture/Nutrition



Health Impact Assessment (HIA)

- HIA is a practical approach used to judge the potential health effects of a policy, program or project on a population, particularly on vulnerable or disadvantaged groups.
- Recommendations are produced for decision-makers and stakeholders, with the aim of
 - maximizing the proposal's positive health effects
 - minimizing its negative health effects.



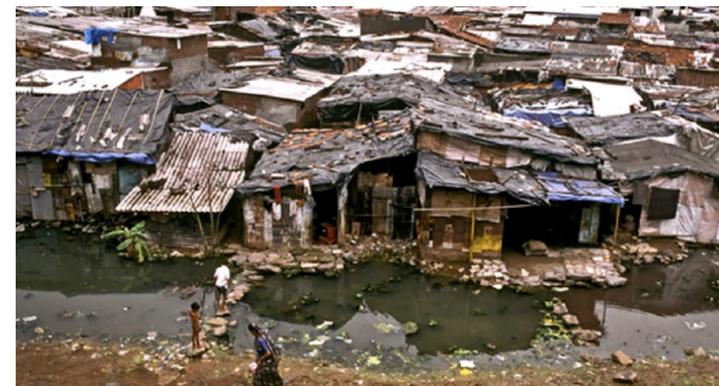
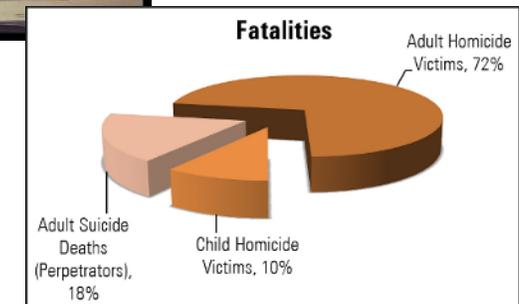
Sustainability

- Promoting local food
 - Farmers Markets decrease food transportation costs
 - Can provide a variety of fresh produce (to promote healthier eating habits)
- Water usage
- Energy supplies that don't rely on fossil fuels
 - Wind
 - Solar
 - Hydroelectric



Sustainable Cities example

- **Healthy, efficient transport** ↔ as measured by % travel by transit/walking and cycling + mortality rates for pedestrians/cyclists.
- **Violence and security** ↔ intentional homicides per 100,000 residents, city-wide and in slums.
- **Slum housing with access to water/sanitation and energy and improved climate resilience** ↔ sustainable urban development.



Energy and Health indicators of Sustainable Development

- This can include the health impacts of:
 - Fossil fuels
 - Biomass fuels
 - Geothermal power
 - Hydropower
 - Nuclear power
 - Electricity transmission
- Some 3.5 million deaths/year may be due to household air pollution from rudimentary biomass and coal stoves – this recent assessment is considerably higher than previous estimates.
- Approximately 3.3 million deaths/year may be due to outdoor air pollution – with exposures highest in developing cities.
- In some developing countries, over one-half of health care facilities have no electricity or lack reliable electricity.
- Some 1.3 billion people lack access to electricity and rely on kerosene lamps and other polluting alternatives for lighting. At the same time, conventional electric grid systems waste a great deal of energy.

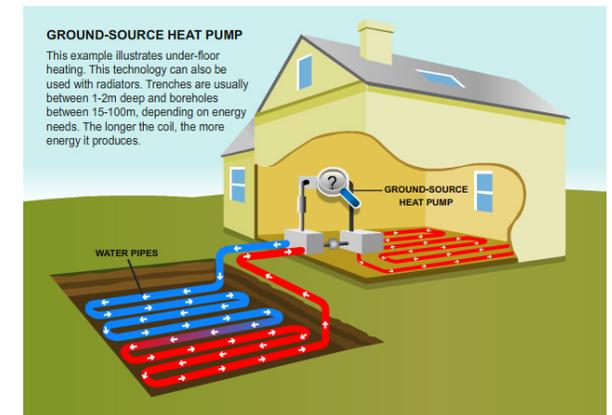
Agriculture and Nutrition indicators of Sustainable Development

- Childhood stunting effects a massive percentage of the world's youth. UNICEF estimates that some 39% of children in the developing world are stunted. 40% of children in sub-Saharan Africa are stunted and in East and South Asia, estimates climb as high as 50% of children. The numbers tally in at 209 million stunted children in the developing world.
- Obesity prevalence ↔ greenhouse gases intensive fast and processed foods.
- % of total daily energy intake from saturated fats ↔ overconsumption of greenhouse gases intensive red meat



Reducing Greenhouse Gas Emissions

- **Transportation**
 - Promoting bicycle usage
 - Public transportation
- **Energy-efficiencies**
 - Give away items, such as local council providing energy-efficient light bulbs to constituents
 - Solar displays
 - Insulation (subsidized by government programs)
 - Ground-source heat pumps



Building for a Sustainable Environment

- New construction seeks to incorporate energy efficiency and “green” building practices.
- Sea walls & river barriers.
- Essential infrastructure.
 - Ensuring that essential services (water, electricity, gas, telephone, etc.) and transportation routes are not interrupted during flooding and other extreme weather events.



Newest issue of maintaining Sustainable Development

- Migrants, migrant workers and asylum seekers are an expanding global population of growing social, demographic and political importance. Disparities in health determinants often exist between a migrant population's place of origin and its destination. The effects of those disparities can be observed at the individual and population levels.



Health indicators of Sustainable Development Summary

Energy - % of households using clean fuels/cooking and heating technologies.

Green jobs - % of workplaces/jobs meeting basic occupational health and safety standards – including air, water, exposure to chemicals and radiation, lighting & ventilation.

Energy in health care – % of health care facilities with access to clean energy and water supplies.

Governance – % of large projects integrating health co-benefits considerations into their planning and implementation, e.g. through a health impact assessment (HIA).



Thank You!!!!!!!

Questions?

