

Intergovernmental Panel on Climate Change (IPCC): Special 'Adaptation' Report

Managing the risks of Extreme Events and Disasters to Advance Climate Change Adaptation

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Precis prepared by the Okanagan-Shuswap Green Party

Summary:

This is a précis of key issues from the 20 page 'Summary for Policy Makers' of the full 600 page IPCC report, which can be found at <http://ipcc-wg2.gov/SREX/>.

This report follows the 'Physical Science' report, released November 2013, stating that Climate Change is '*unequivocal*'. A 2 page precis of that report, prepared by the Okanagan-Shuswap Green Party, can be found at <http://www.okshuswapgreens.com> under 'Our Library / Reports'.

This new 'Adaptation' report focuses on reducing exposure and building resilience to disasters that may result from climate change, as it combines with climate variability and socioeconomic conditions.

The IPCC report is authored by 220 world-respected scientists, engineers and economists representing 62 countries, who absorbed over 18,000 review comments. It has been peer reviewed before release.

Climate Impacts:

- As 'extreme events' evidence has been gathered with scientific certainty only since 1950, confidence that these events indicate long-term trends ranges from '*low*' for tropical cyclones & tornadoes to '*very likely*' for droughts, pole-ward shift in storm tracks, & flooding.
- Disaster losses since 1950 have increased dramatically, after adjustment for population increase and wealth factors.

Past experience with climate extremes:

- Exposure to disasters has been impacted by human development, such as:
Negative: removing mangrove swamps, building on shorelines, lowering water tables
Positive: building break-waters & effective storm sewers, improving building codes, etc.
- International disaster relief has mitigated wealth inequalities between countries.
- Post disaster rebuilding has often recreated existing vulnerabilities.
- Short term thinking has been seen in rebuilding. For example, a strengthened dike system can lead to increasing settlement in flood zones.

Future climate extremes:

IPCC reports make predictions in multiple scenarios ranging from rapid decreases in carbon added to the atmosphere (best case), to '*no change*' in current carbon emission levels (worst case).

Results summarized here are mid-range:

- By 2100, most regions will experience temperature increases of about 2 degrees C; with northern regions experiencing +5 degrees and tropical regions experiencing +1 degree.
- It is '*likely*' that heavy rainfall events will increase over many areas, and that maximum wind speeds will increase in cyclone events.
- Extreme rain events that have occurred every 20 years will occur every 10 years, by 2100.

- It is *'very likely'* that sea levels will rise about 50 cm; bringing coastal inundation and erosion.
- There is *'high confidence'* that glacial melting, floods & heat waves will cause slope instabilities.
- There is *'medium confidence'* that droughts and drying soil will increase; most extremely in the U.S. West down to Central America, around the Mediterranean, in South Africa, and in Australia.

Human impacts:

- There is *'high confidence'* that current water management systems and other infrastructure will be seriously impacted, by both drought and flooding.
- There is *'high confidence'* in increased human and economic losses from tropical cyclones.
- There is *'medium agreement'* that climate change will force major population relocations.
- There is a potential link between climate change, resource shortages, and violent conflict.

Managing the risks:

- Due to uncertainties, this study recommends *'low regrets'* measures, meaning measures that will be helpful over a large range of outcomes.
- Disaster response must be integrated across countries and cover a broad portfolio of actions.
- International funding for disaster relief needs to be increased, and coordination improved.
- Integration of scientific knowledge will provide advanced warning and faster response time.
- Risk management spending needs to adjust upwards over time against projected disaster losses.
- Many specific examples of needed action are provided. The list below is just a sample.

Sea inundation of island states

- Improved early warning, population relocation, mangrove preservation
- Restricted development in coastal areas at risk

Flash floods in West Africa

- Improved drainage, strengthened infrastructure, poverty reduction
- Riparian buffers, reforestation, early warning systems

Heat waves in urban Europe

- Vulnerability mapping and reduced exposure in key areas
- Increased urban green spaces and adequate energy made available for cooling

Hurricanes in the U.S. and Caribbean

- Improved forecasting and building codes
- Restricted development in areas at risk

Droughts in West Africa

- Improved water storage systems and livelihood diversification
- conservation agriculture – crop rotation, drought resistant crops

Canada-Specific Impacts:

- Temperature increases in the 3 to 4 degree range by 2100 are higher than the world norm.
- An eastward shift in the Gulf Stream may lead to colder and dryer winters in the Maritimes.
- No specifics are given for Canadian mitigation, but extrapolated conclusions could be:
 - Melting glaciers in the Rockies could require upgraded summer water management
 - More heat waves in the prairies could require crop replacement and soil management
 - A northerly shift in hurricane paths could require risk management in Eastern Canada