The wider impact: long term effects on health, environment and development

- Ira Helfand, International Physicians for the Prevention of Nuclear War (IPPNW)
- Oslo, 4 March 2013

ican

international campaign to abolish nuclear weapons

Long-term and wider impact

- Impact of a nuclear weapons explosion on the environment, economy, and development
- The impact of the broader use of nuclear weapons: climate change and nuclear famine

Environmental impact

- Impact will vary depending on the specific local conditions
- Widespread radioactive contamination affecting housing, food and water supplies
- Clean-up process will be extremely expensive and generate more radioactive waste

Economic Cost

- Direct Property Damage $50 – 500 Billion
- Trade Disruption $100 – 200 Billion
- Indirect Costs $300 –1,400 Billion (1.4 Trillion)
- Ongoing disruption of economic activity

Abt Associates 2003

Impact on development

- Diversion of funds from development to emergency relief and reconstruction
- Refugees from attack zone would cause economic and social instability
- Disproportionate long-term affects on poor and vulnerable populations such as women and children

The specific impact of a regional nuclear war

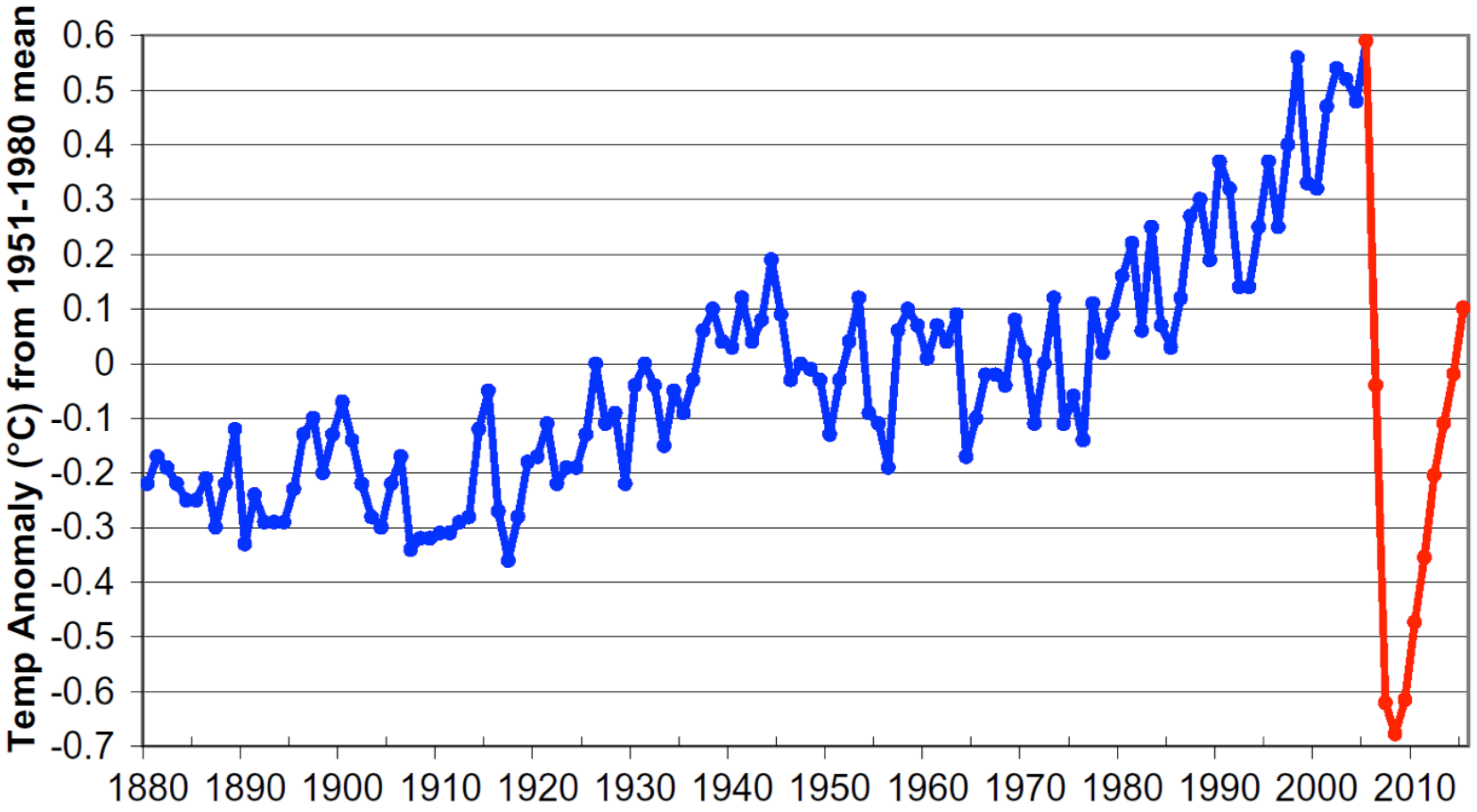
The dangers of nuclear weapons today
Nuclear war in South Asia

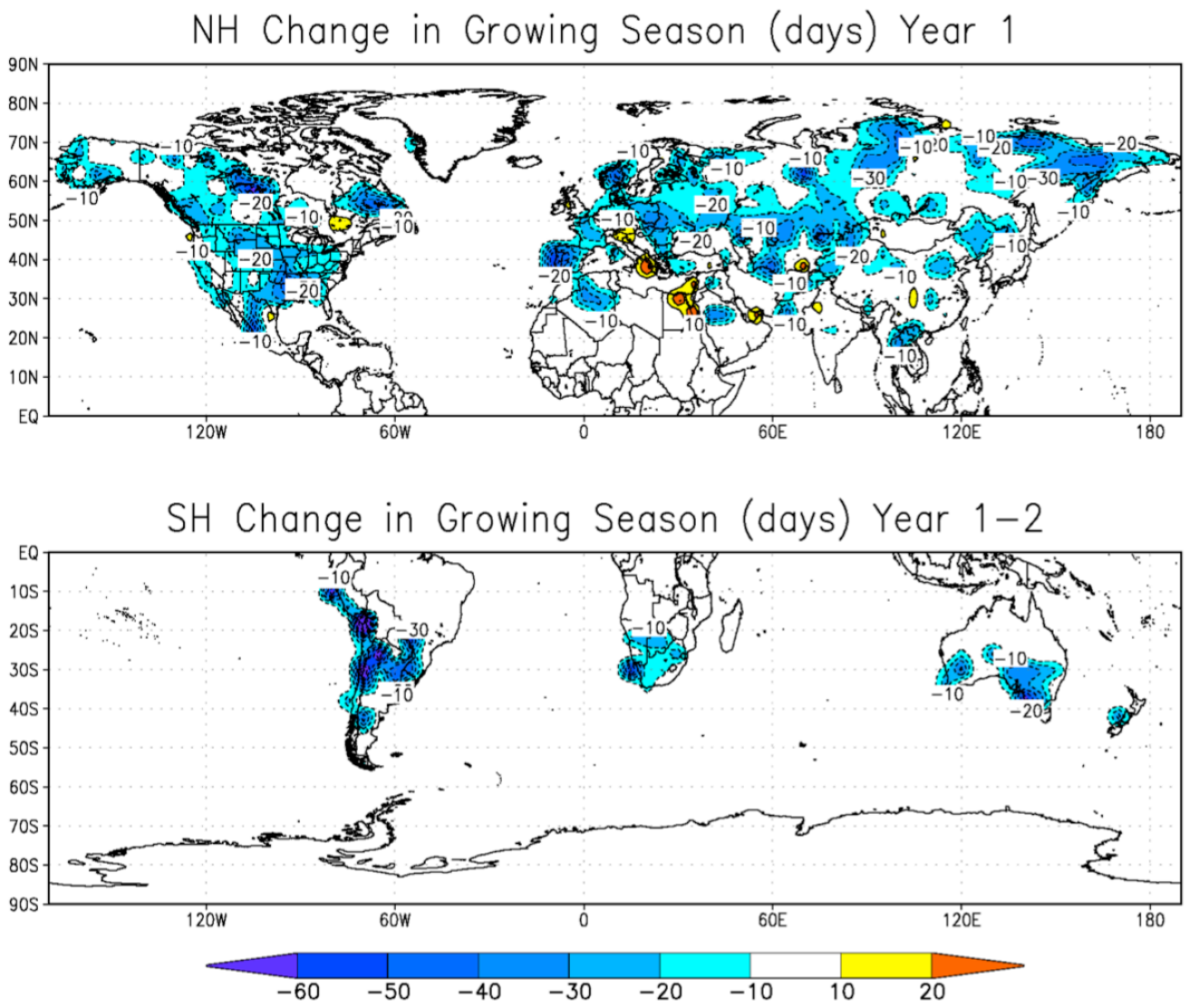
- 100 Hiroshima sized nuclear weapons used against urban targets
- 20 million deaths in major cities in India and Pakistan
- Radioactive contamination throughout the region
- Global climate distruption from smoke and soot

Climate Disruption from Limited Nuclear War

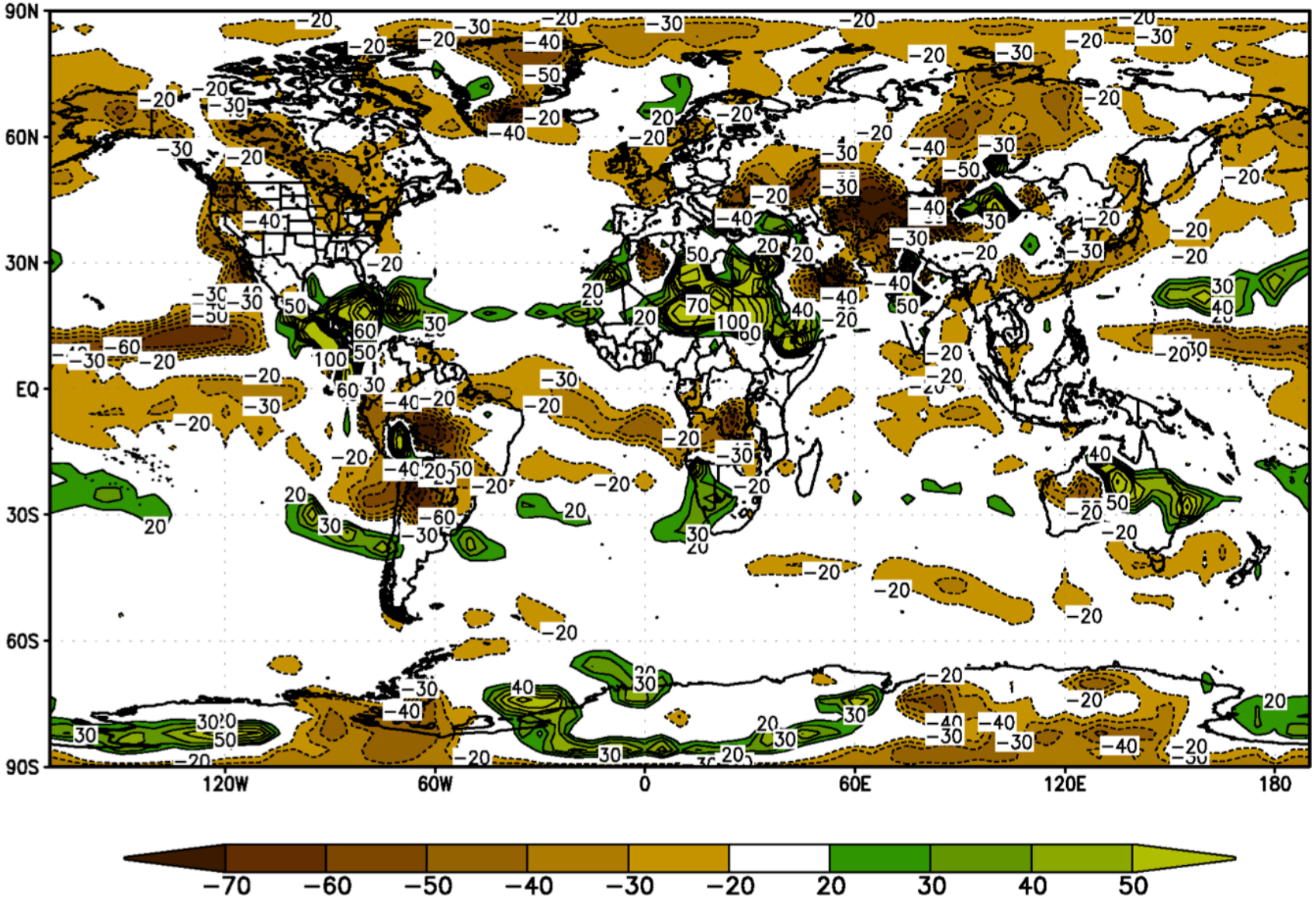
- Nuclear explosions burn large areas of cities that are attacked
- 5 million tons of soot lofted high into the atmosphere absorbs incoming sunlight
- Large, rapid drop in surface temperature —1.3 degrees C.

GISS Global Average Temperature Anomaly
+ 5 Tg smoke in 2006

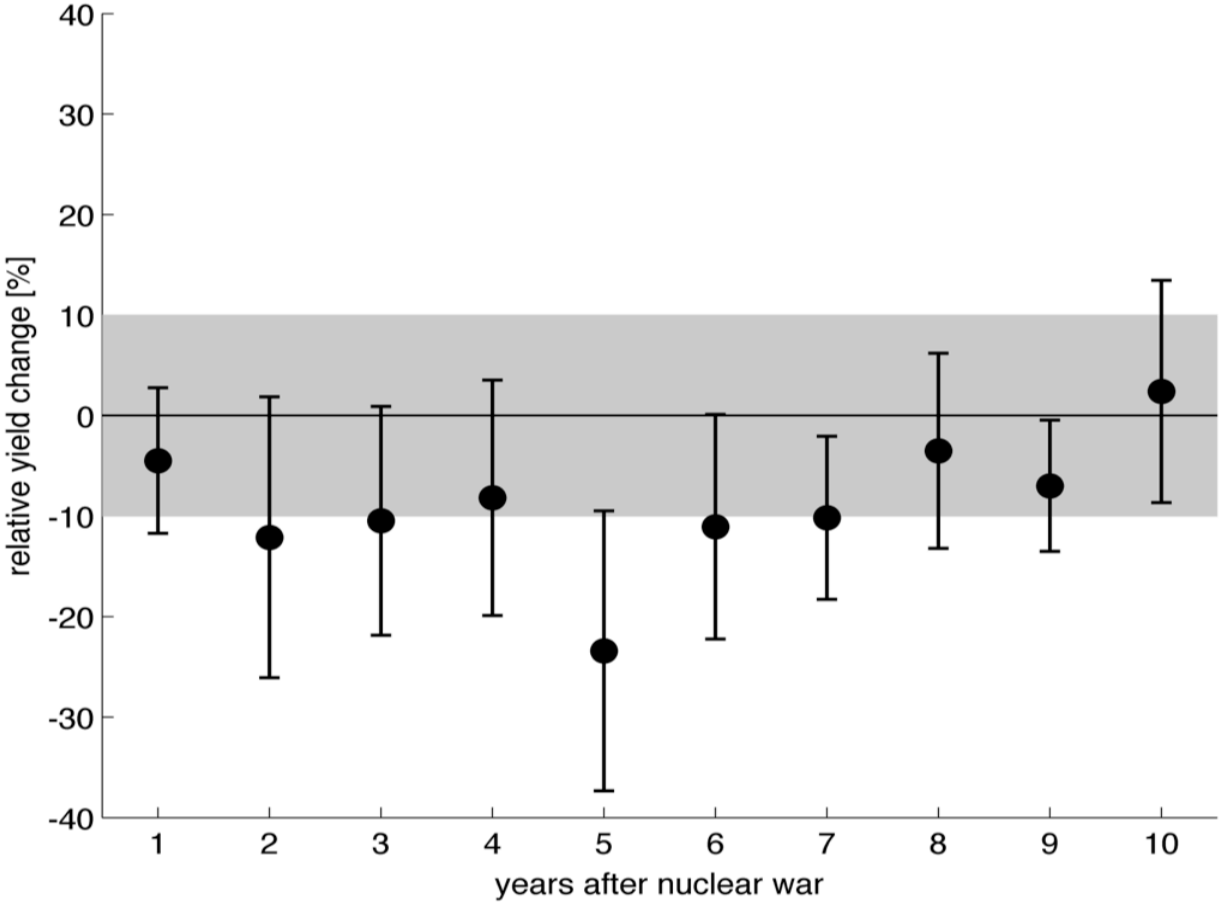



NH Change in Growing Season (days) Year 1
90N
80N
70N
60N
50N
40N
30N
20N
10N
EQ
120W
60W
0
60E
120E
180
SH Change in Growing Season (days) Year 1–2
EQ
10S
20S
30S
40S
50S
60S
70S
80S
90S
120W
60W
0
60E
120E
180
−60
−50
−40
−30
−20
−10
10
20

Change in Precipitation (%) JJA Year 1



Per Cent Decline in US Corn Production over Time



Decline in Chinese Rice Production Over Time

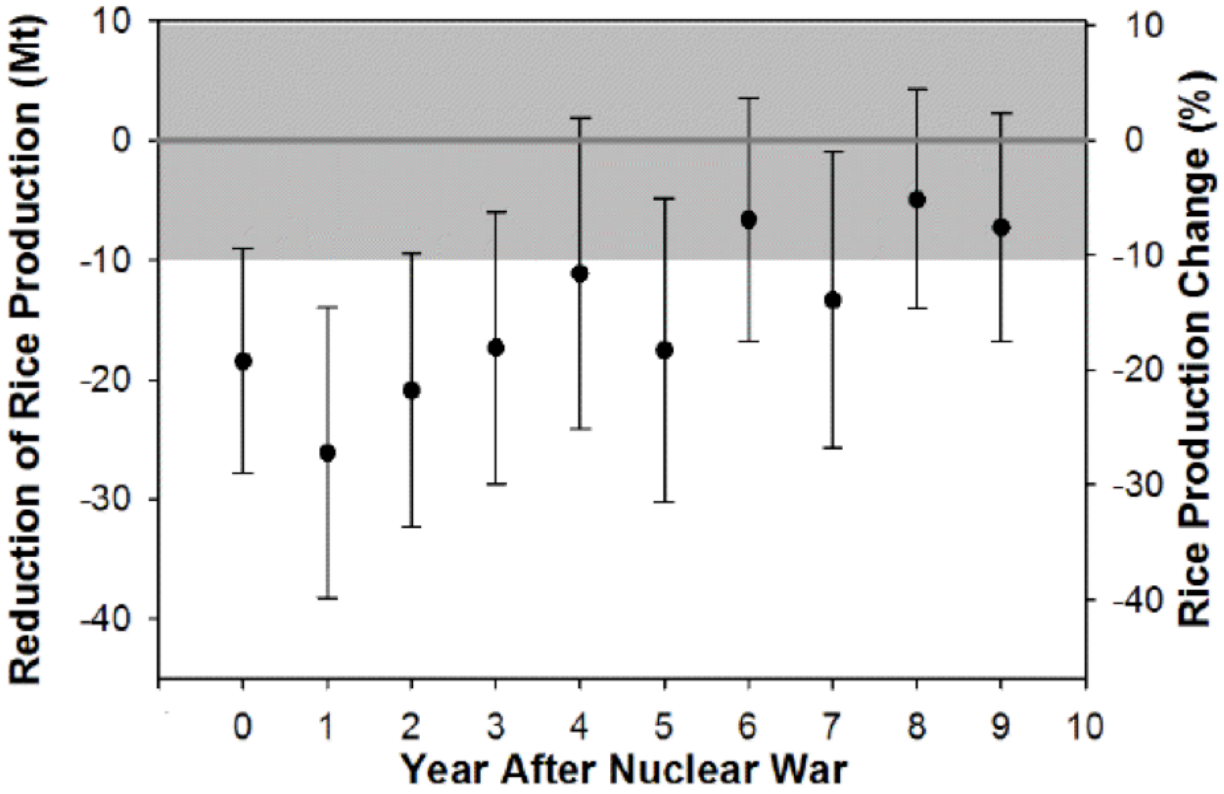
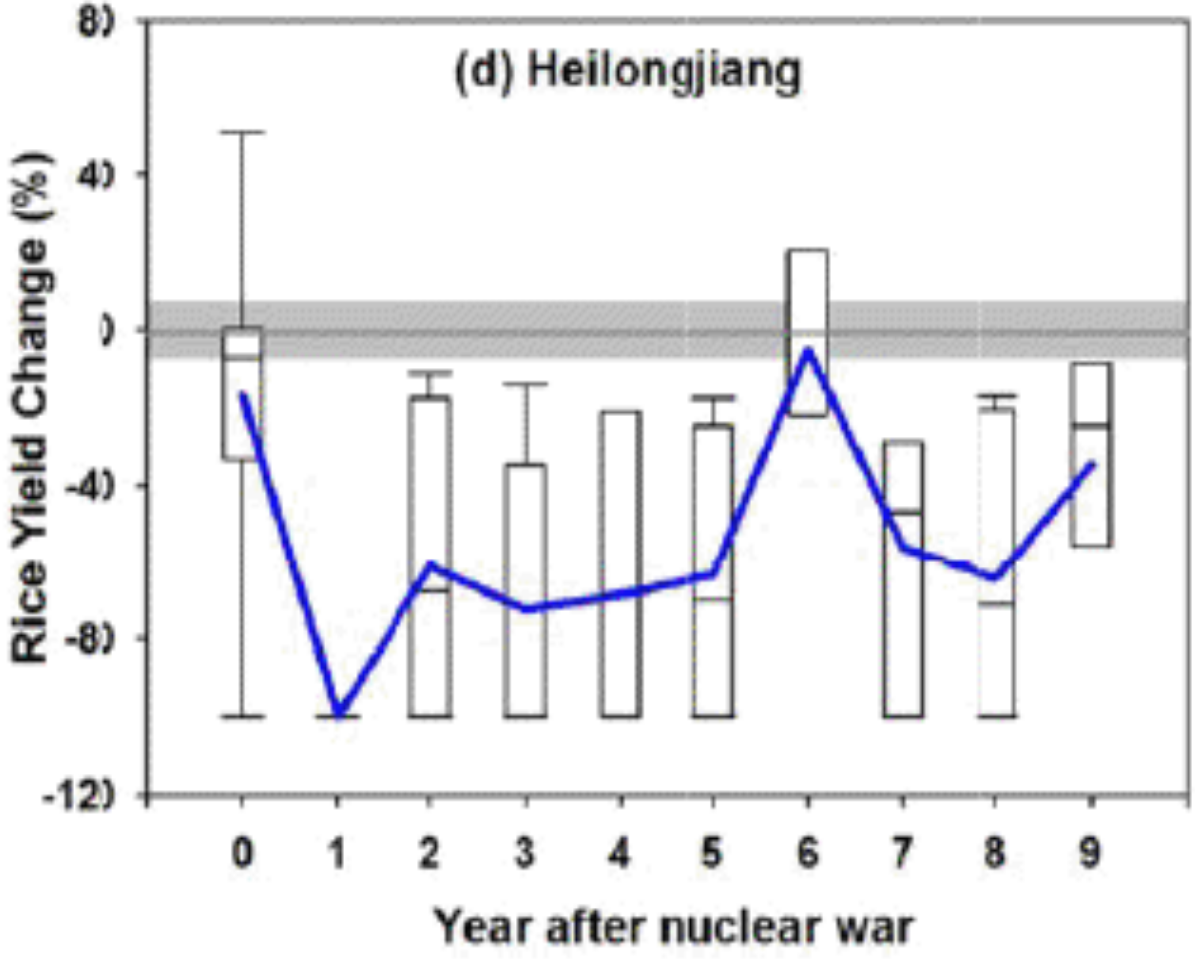
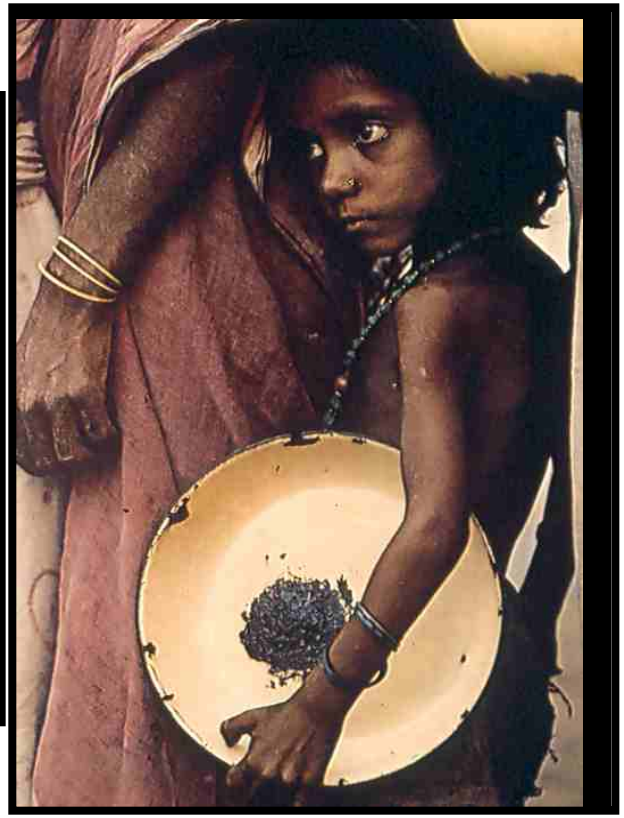


Figure 5: Reduction of rice production with whiskers showing one standard deviation for each nuclear war year. The gray area shows ±1 standard deviation from the control runs, illustrating the effect of interannual weather variations.


(d) Heilongjiang
Rice Yield Change (%)
8)
4)
)
-4)
-8)
-12)
0
1
2
3
4
5
6
7
8
9
Year after nuclear war

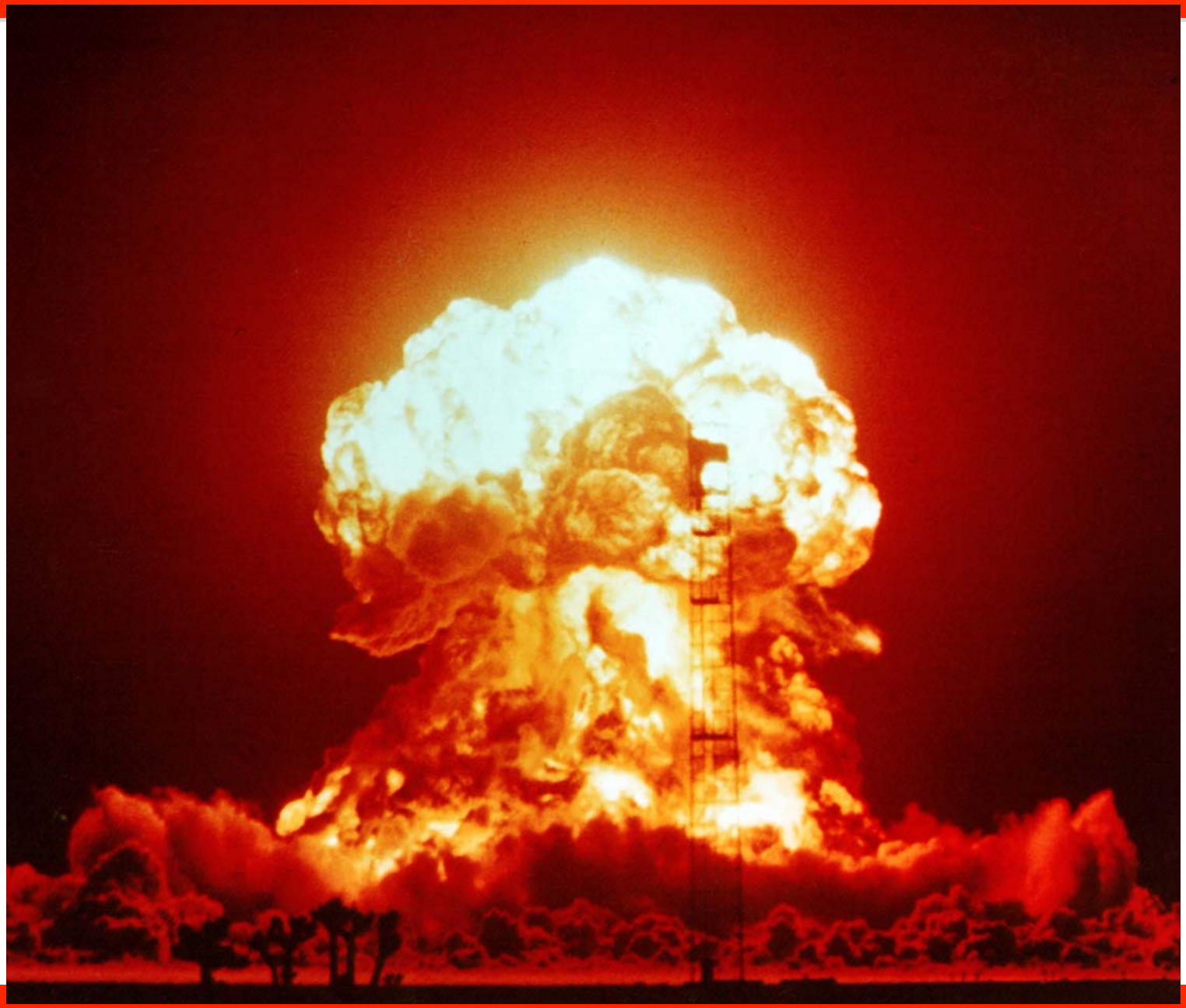


Chronic Malnutrition Today

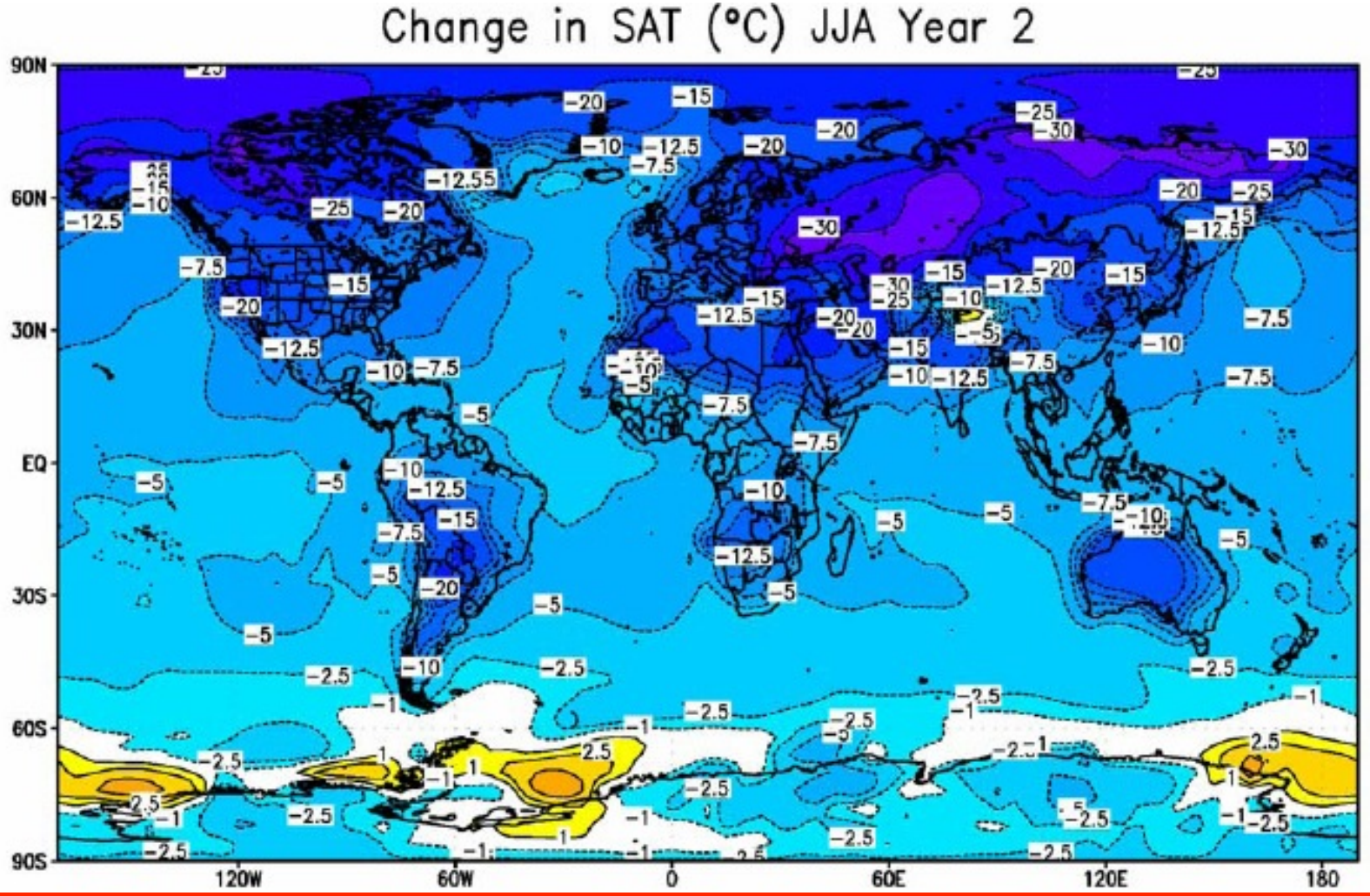
870 Million People

1 billion dead

from starvation alone?



Surface Air Temperatures 2 years after 150 million tons of smoke enters



- This is not the future that must be, but it is the future that will be, if we do not eliminate nuclear weapons