



greenhub  
resilientinnovations



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**WHAT'S HAPPENING TO OUR HOME?**



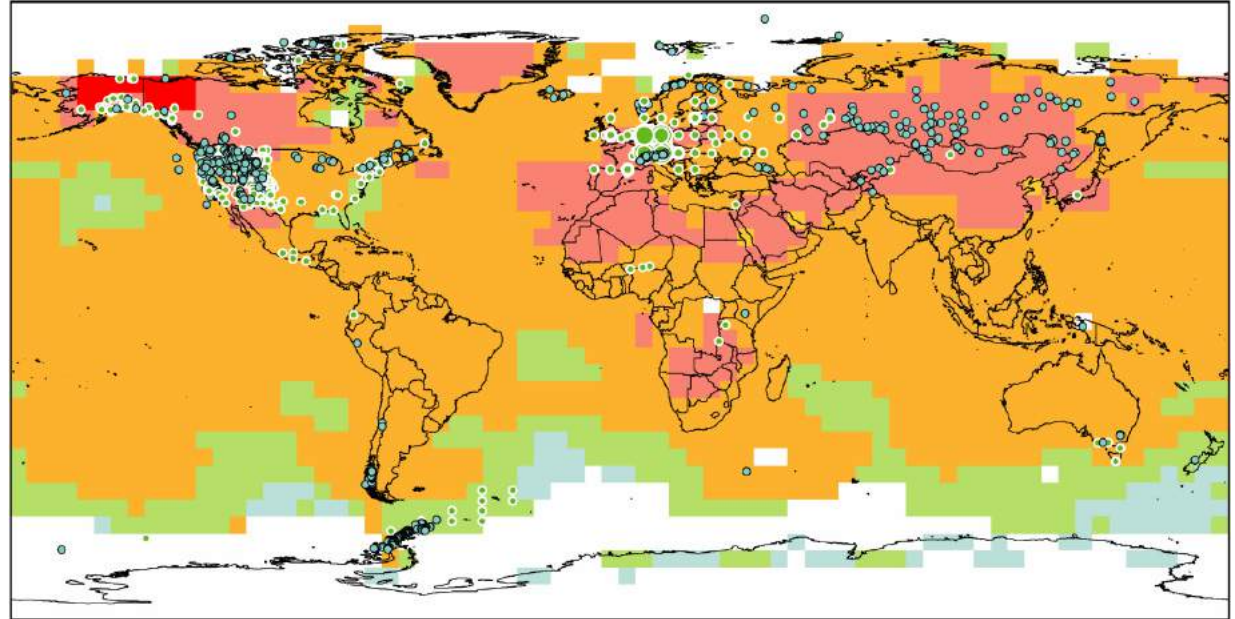








This map shows observed changes in physical and biological systems from 1970-2004



Temperature change °C  
1970-2004



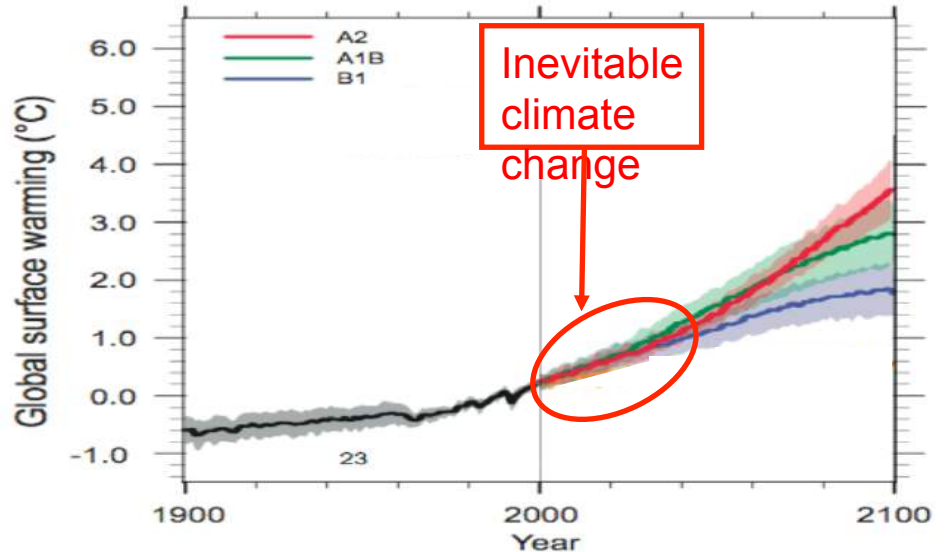
-1.0 -0.2 0.2 1.0 2.0 3.5

- Physical systems (snow, ice and frozen ground; hydrology; coastal processes)
- Biological systems (terrestrial, marine, and freshwater)

Source: IPCC

## CLIMATE CHANGE CAN NOT BE STOPPED

- Changes until about 2040 are already inevitable
- Changes later in the century will depend on greenhouse gas emissions in the next couple of decades
- We need both to reduce greenhouse gas emissions (**'mitigation'**) and **adapt** to inevitable climate change
- Adaptation strategies need to be **robust to climate uncertainties**



Annual average global temperature increases to 2100 under different greenhouse gas emissions scenarios, relative to 1980-1999 baseline

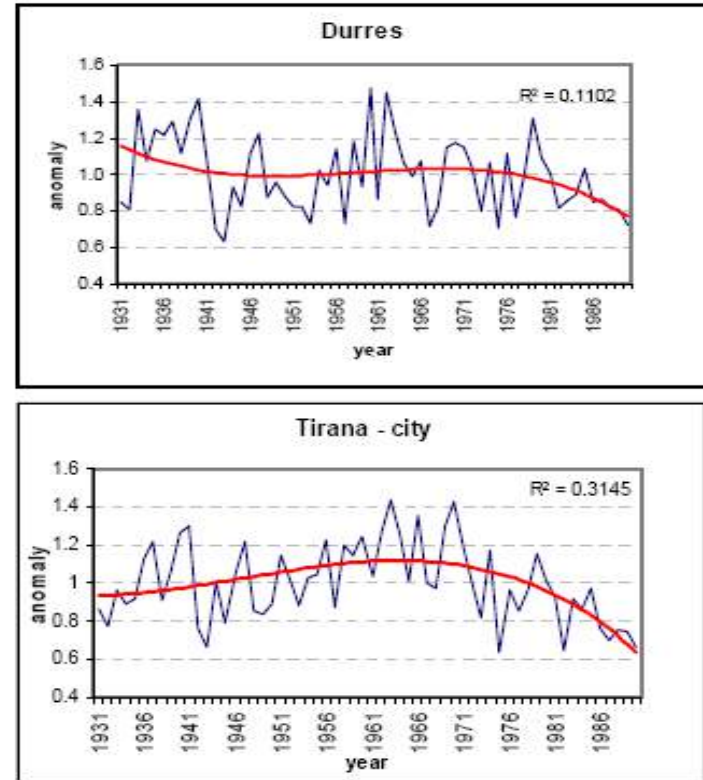


There will always be natural climate variability  
Climate change trends will be superimposed  
on natural variability

The effects of natural variability may dominate  
climate change effects for several decades

- We need to make decisions that are robust to climate variability and future climate change
- This is particularly important for long-lived assets, which need to perform for decades into the future

Variability and trends in precipitation for Durres and Tirana  
(Source: E. Bruci, HMI, 2008)

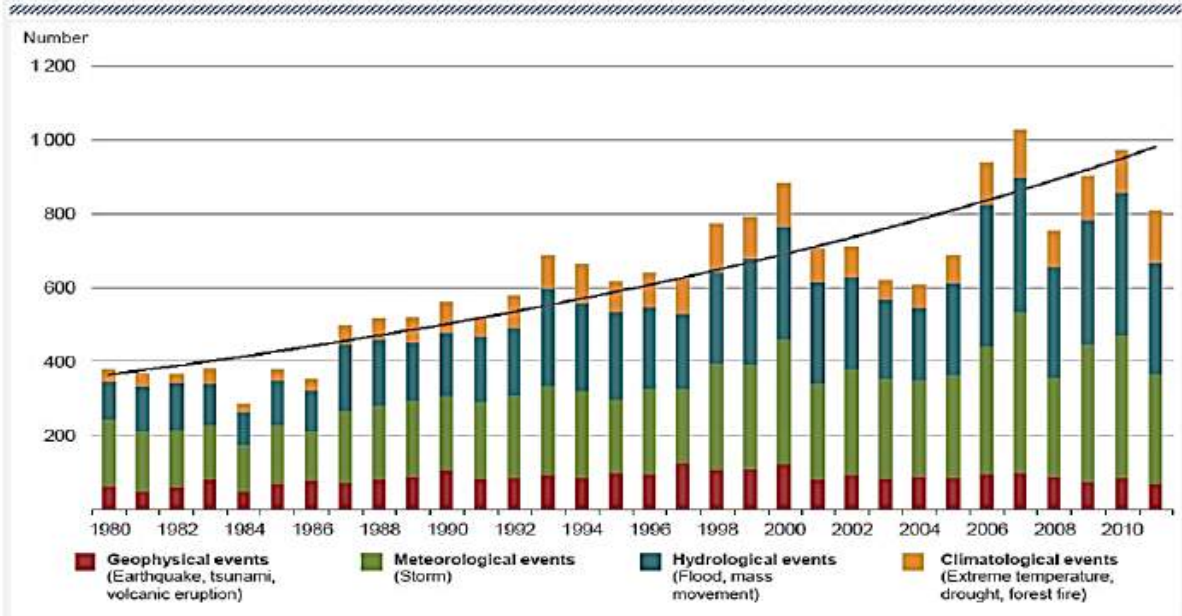


NatCatSERVICE

## Natural catastrophes worldwide 1980 – 2011

### Number of events with trend

Munich RE 



© 2012 Münchener Rückversicherungs-Gesellschaft, Geo Risks Research, NatCatSERVICE – As at January 2012



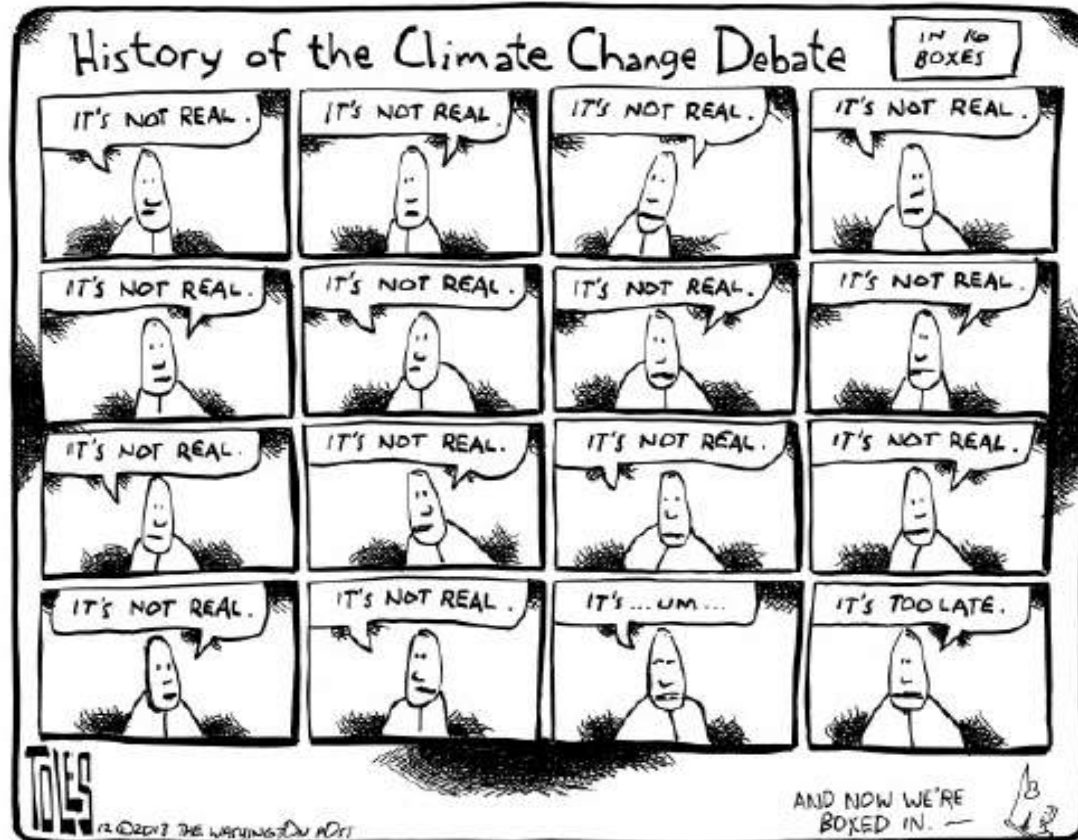
- For new assets, changing climate risks should be considered at the 'feasibility' and 'front end engineering design' stages
- There may be low cost opportunities to build in resilience for climate change
- For existing assets, building in resilience for climate change should be considered as part of major refurbishments and upgrades



High-level risk assessment of key product categories:

- Agriculture (tea, coffee, soybeans, wheat, rice & palm oil)
- Marine
- Livestock
- Cotton
- Wood products

MARKS &  
SPENCER



- **Green Paper** “*Adapting to climate change in Europe - options for EU action*” – 29 JUNE 2007
- **White Paper** “*Adapting to climate change: Towards a European framework for action*” – 4 APRIL 2009
- ✓ Water Framework Directive - Floods Directive
- ✓ Water Scarcity and Droughts strategy, assessment (within 2012)
- ✓ Nature protection directives - Post-2010 Strategy on Biodiversity
- ✓ Marine Strategy Framework Directive; Integrated Coastal Zone Management

[http://ec.europa.eu/clima/policies/adaptation/what/index\\_en.htm](http://ec.europa.eu/clima/policies/adaptation/what/index_en.htm)



## Priority 1: Promoting action by Member States

- Action 1. Encourage MS to adopt Adaptation Strategies and action plans**
- Action 2. LIFE funding, including adaptation priority areas**
- Action 3. Promoting adaptation action by cities along the Covenant of Mayors initiative**



## Priority 2: Better informed decision-making

- Action 4. Knowledge-gap strategy**
- Action 5. Climate-ADAPT**



## Priority 3: Key vulnerable sectors

- Action 6. Climate proofing the Common Agricultural Policy, Cohesion Policy, and the Common Fisheries Policy**
- Action 7. Making infrastructure more resilient**
- Action 8. Promote products & services by insurance and finance markets**



## Priority 1: Promoting action by Member States

### Action 1. Encourage MS to adopt Adaptation Strategies and action plans

- 20 NAS adopted to date, several more NAS/action plans under preparation.

### Action 2. LIFE funding, including adaptation priority areas

- Cross-border floods management, coastal management, urban environment, mountain and island areas, drought-prone areas (water, desertification, fire risks)
- Annual calls for proposals. Next call will open 1 June 2015
- Financial instrument, National Capital Financing Facility with EIB, ENV

### Action 3. Promoting adaptation action by cities along the Covenant of Mayors initiative: Mayors Adapt

- Launched in March 2014
- Complements mitigation efforts under existing Covenant

## Priority 2: Better informed decision-making

### Action 4. Knowledge-gap strategy

- Identify and prioritise knowledge gaps
- Feed this into programming Horizon 2020
- Coordination with other knowledge generation processes (e.g. RTD, JRC, ENV, EEA, LIFE, etc.)

### Action 5. Climate-ADAPT:

- Develop interfaces with other databases and climate services (incl. Copernicus)
- Several improvements made to the Climate-ADAPT platform, new presentation
- Improve usability and accessibility of information and data
- Improve interaction with national platforms, national and regional information

The screenshot shows the Climate-ADAPT website. At the top, there is a navigation bar with links for 'Adaptation Information', 'EU Adaptation Policy', 'Countries, regions, cities', 'Tools', 'Links', 'Search the database', and 'Newsletters'. The main content area features a large image of a modern building with a curved facade, titled 'About Climate Change Adaptation in Europe'. Below the image is a text block explaining the platform's purpose and a list of key features: 'Expected climate change in Europe', 'Current and future climate study of regions and sectors', 'National and transnational adaptation strategies', 'Adaptation case studies and potential adaptation options', and 'Tools that support adaptation planning'. To the right of the main content is a search interface with a 'SEARCH THE CLIMATE ADAPTATION DATABASE' button, a 'Search Terms:' field, and a 'Keyword Search' button. Below the search bar are dropdown menus for 'Sector:' (with options like 'Agriculture and Forest', 'Biodiversity', 'Coastal areas') and 'Country:' (with options like 'Algeria', 'Austria', 'Belgium'). A 'SEARCH' button is located below these menus. At the bottom of the page, there are four interactive icons: 'New to adaptation? Use the Adaptation Support Tool', 'What are European countries doing?' (with a 'Choose a country' dropdown and a 'GO' button), 'Find case studies on adaptation in Europe' (with a map of Europe), and 'Share your information' (with a person icon and a plus sign).

<http://climate-adapt.eea.europa.eu/>



## Priority 3: Key vulnerable sectors

### Action 6. Climate proofing the CAP, Cohesion Policy, and the Common Fisheries Policy

- Guidance
- Capacity building
- Comprehensive effort to mainstreaming climate action into the programming of the European Structural and Investment Funds (ESIF)

### Action 7. Making infrastructure more resilient

- Mapping standards through CEN/CENELEC/ETSI
- Guidelines for project developers
- Climate Proofing of Major Projects, Cost-Benefit Analysis Guidelines (CBA)

### Action 8. Promote products & services by insurance and finance markets

- Green paper insurance of disasters
- Stakeholder dialogue: workshops with national insurance federations organised

## Key sectors, key policies

Consequences of climate change lead to **vulnerabilities**

Mean temperature, sea level rise  
**Extreme** weather events

Many **sectors** affected

Agriculture, health, energy, transport

Various **regions** affected

Coastal areas, Mediterranean,  
Alpine and mountainous regions,  
Baltic, **Urban** regions

Mainstreaming into **policies**

CAP, Cohesion Policy, Common  
Fisheries Policy...



## Adaptation in key sectors: water

- Climate change will impact the whole hydrological cycle.
- Temperature increases will alter precipitation, groundwater levels, soil moisture, snow cover, river flows, raise sea levels.
- Results will vary from place to place: water scarcity, flooding, reduced water quality, coastal erosion, salinisation, degraded ecosystem services.
- 60% of the EU's territory lies in transboundary river basins  
→ transboundary cooperation is vitally important

EU directives, WFD, Water Scarcity and Droughts Policy, the Floods Directive are transposed into national legislation, the level at which programmes and measures, including adaptation initiatives, will be implemented.

# Soluzioni: limitare espansione urbana





# Soluzioni: riciclare i terreni



# Soluzioni: mitigare



## Funding and financing

Beyond **policies**, adaptation to climate change is mainstreamed into **EU funds** and financial instruments

### EU Budget 2014-2020

At least 20% of the expenditure must be climate-related  
This includes adaptation

### European Structural and Investment Fund

'Climate proofing' of projects, promoting climate change adaptation, risk prevention and management

### LIFE

Cross-border **floods** management, coastal management, urban environment, mountain and island areas, **drought**-prone areas (water, desertification, fire risks)





Horizon 2020 is the financial instrument implementing the Innovation Union.

=> at least 60 % of the total Horizon 2020 budget will be related to sustainable development, the vast majority of this expenditure contributing to mutually reinforcing climate and environmental objectives.

=> It is expected that around 35% of the Horizon 2020 budget will be climate related expenditure.

Adaptation to climate change is most represented in two societal societal challenges.

**Climate action, environment, resource efficiency and raw materials**

**Secure societies - protecting freedom and security of Europe and its citizens.**





STATO DI FATTO



Cava de' Tirreni, inaugurato il nuovo piazzale Gramsci



**CRONACA**

**Cavanotizie.it**  
September 19, 2016 - 6  
Cava de' Tirreni. Piazza Antonio Gramsci diviene la "piazza degli eventi"  
Finalmente una buona prima notizia: piazza Antonio Gramsci di Cava de' Tirreni, che è quella a monte del Distretto Sanitario di via Antonio Gramsci, è divenuta la "piazza degli eventi"

**CAVA: PIAZZALE GRAMSCI, IN STANBY L'ESTERNALIZZAZIONE**

13 agosto 2016

**LaMia**  
November 18, 2015 - 6  
Inaugurata la nuova mobilità fra Piazzale Gramsci e Via Generale Luigi Platani, restano diversi nodi irrisolti:  
1) La viabilità attualmente vigente...  
2) Due sgambatoi rimangono chiusi in attesa della delibera per l'affidamento a privati del chiosco barrio pubblico di affollamento.  
3) Il sistema di illuminazione, per realizzarlo, rimane inaspettatamente aperto.  
4) Il nuovo parcheggio, per favorire gli automobilisti che portano il proprio cane allo sgambatoio anziché sotto i portici, dovrebbe essere gratuito quantomeno la prima mezz'ora...

**Atti vandalici al chiosco dello sguinzaglioio di piazzale Gramsci: fuoco alla struttura inaugurata lo scorso anno.**

**MISSION**

**SOSTENIBILITÀ**  
**VALORIZZAZIONE**





PORTAMENTO: arboreo arbustivo rampicante erbaceo

**ALLORO**  
*Laurus nobilis*  
Tipico del Mediterraneo. Fioresce in Primavera. Preferisce i climi temperati e si adatta a tutti i terreni. Altezza fino a 10 m.



**ASFOLELO BIANCO**  
*Siphocampylus albus*  
Pianta presente in tutta l'Europa meridionale. Si trova su tutti i terreni. Fiorisce a maggio e giugno.



**LECCIO / ELCE**  
*Quercus ilex*  
Cresce in tutta la fascia temperata del Mediterraneo. Fiorisce da aprile a giugno. Altezza fino a 25 m.



**LENTISCO**  
*Platanus holosericea*  
Pianta delle regioni costiere del bacino del Mediterraneo. Fiorisce da Aprile a Maggio. Altezza fino a 4 m.



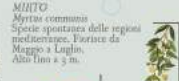
**ALBERO DI CRUDA**  
*Cercas algoutorum*  
Di origini mediterranea, si adatta bene ai terreni aridi e sassosi. Fiorisce a maggio. Altezza fino a 10 m.



**LAVANDA**  
*Lavandula angustifolia*  
Presente nel bacino del Mediterraneo, su terreni aridi e sassosi. Altezza fino a 2 m.



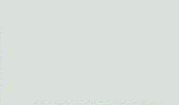
**SCIRO COBALINE**  
*Sorbus domestica*  
Albero tipico dell'Europa Meridionale, cresce prevalentemente su substrato calcareo. I frutti maturano in autunno. Altezza fino a 13 m.



**GINESTRA DEI CARBONAI**  
*Cytisus scoparius*  
Pianta spontanea delle regioni mediterranee. Fiorisce da Maggio a Luglio. Altezza fino a 3 m.



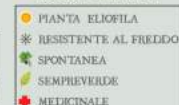
**FICO**  
*Ficus carica*  
Di origini asiatiche, predilige i luoghi soleggiati. Fiorisce a Maggio e ad Agosto. Altezza da 6 ai 10 m.



**JULIA**  
*Jura grandiflora*  
Pianta tipica del sud Europa. Prospera in luoghi soleggiati, substrato calcareo. Altezza da 50 cm a 1 m.



**ROVERELLA**  
*Quercus pubescens*  
Distribuita nel bacino del Mediterraneo, vegeta su suoli di diverso tipo. Altezza dai 20 ai 25 m.



**ANEMONE DELL'APPENNINO**  
*Anemone apennina*  
Tipica dell'Europa meridionale. Fiorisce tra Marzo e Maggio. Altezza fino a 35 cm.



**ACEVO CAMFESTIE**  
*Asarum europaeum*  
Cresce in Europa ed Asia, in pianura, nelle zone di collina e submontane in tutto l'emisfero boreale. Altezza fino a 35 cm.



**BORLAGINE**  
*Boopis officinalis*  
Pianta annuale originaria del Medio Oriente. Fiorisce da Maggio a Settembre. Altezza fino a 70 cm.



**CARRIBO**  
*Ceratonia siliqua*  
Originario del bacino del Mediterraneo, del Portogallo e Marocco. Altezza fino a 10 m.



**FINOCCHIO SEIMITICO**  
*Foeniculum vulgare*  
Pianta perenne, originaria delle regioni costiere mediterranee. Fiorisce in estate. Altezza fino a 1,5 m.



VISTE FOTOREALISTICHE



STUDIO DI MASSIMA

IDENTIKIT.

- PIANTA ELIOFILO
- ✱ RESISTENTE AL FREDDO
- SPONTANEA
- SEMPREVERDE
- MEDICINALE
- AROMATICA
- PERENNE

- BIANCOSPINO
- CORBEZZOLO
- AGRIFFOGLIO

INGRESSI SPECCHIO D'ACQUA FONDO DI GRAMIGNA







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