



Water, Climate Change and the 'Boomerang Effect': avoiding unintentional consequences for resource insecurity

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COUNTRIES THAT JOINED THE PARIS CLIMATE AGREEMENT

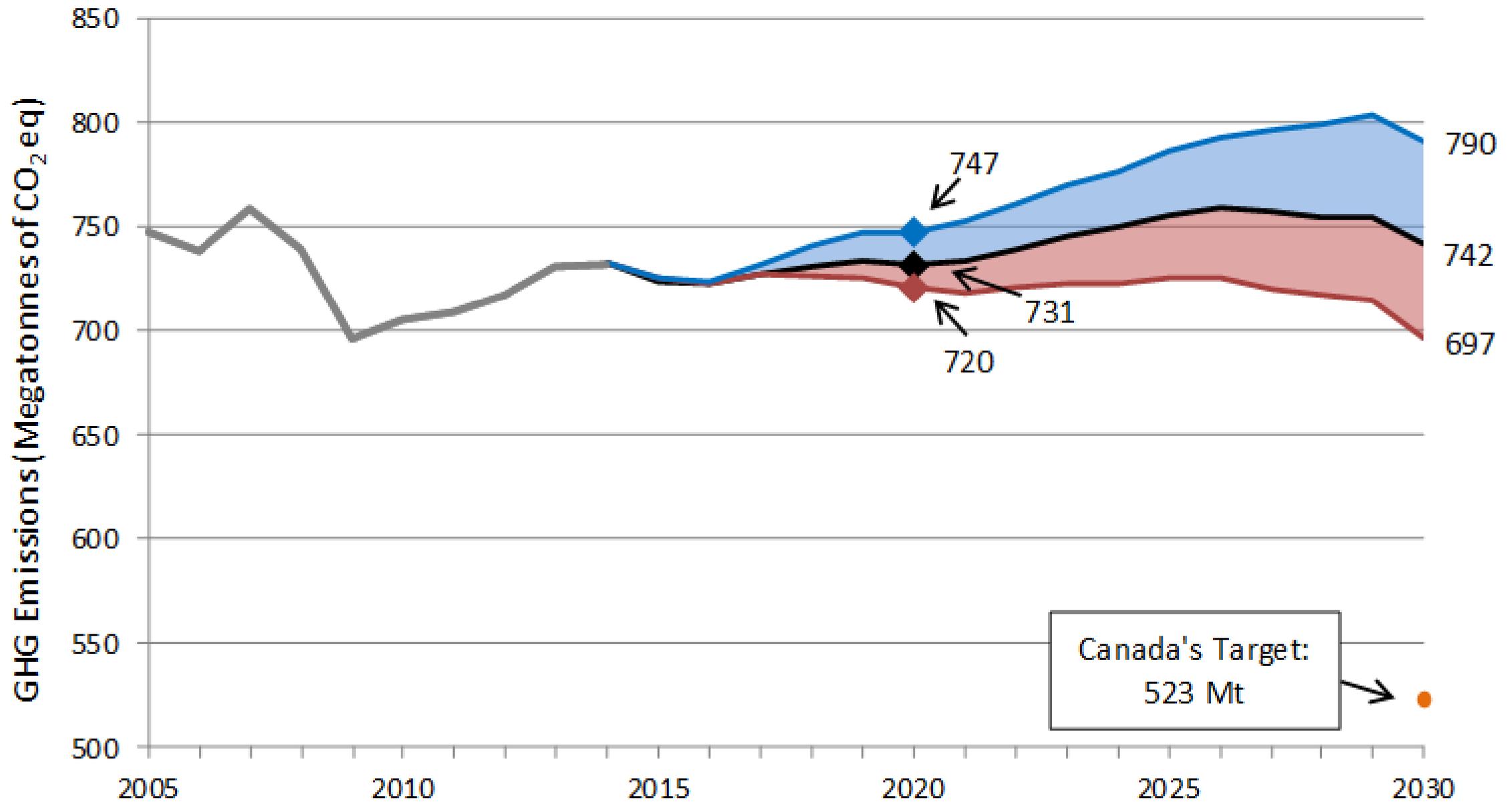
■ Ratified (146) ■ Signed (48) ■ Not signed/Withdrawing (3)



SOURCE: UNFCCC NOTE: Denmark's agreement excludes Greenland. Map is updated as of May 31, 2017.

COP 21 and the Paris Agreement

- INDCs → NDCs
- Pan-Canadian Framework on Clean Growth and Climate Change adopted December 9, 2016.
- Comprehensive plan to reduce emissions across all sectors of the economy, accelerate clean economic growth, and build resilience to the impacts of climate change.
- The actions outlined in the Pan-Canadian Framework, supported by federal investments announced in Budget 2017, will enable Canada to meet or even exceed its target to reduce emissions to 30% below 2005 levels by 2030.

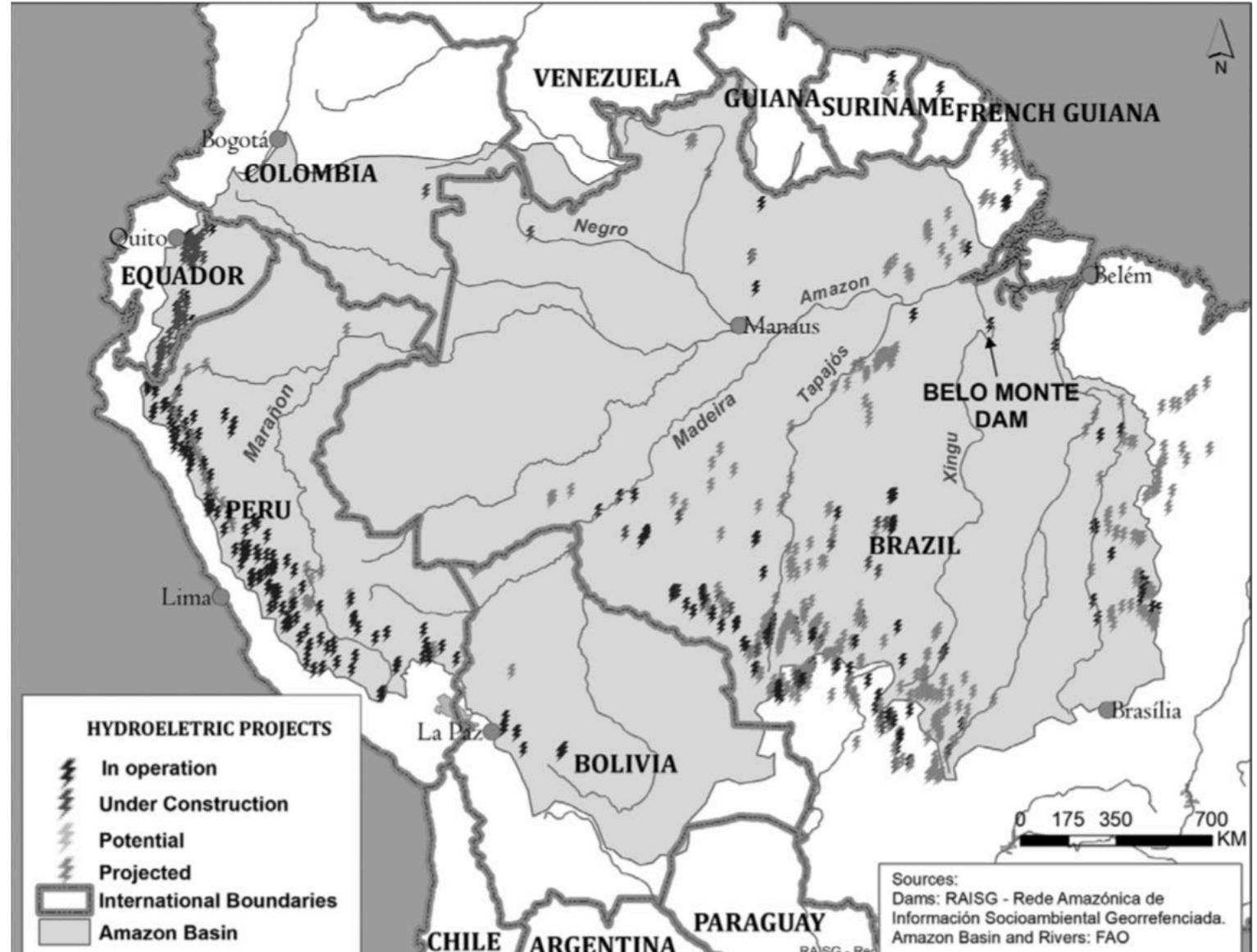


Earthscan Studies in Water Resource Management

WATER, CLIMATE CHANGE AND THE BOOMERANG EFFECT

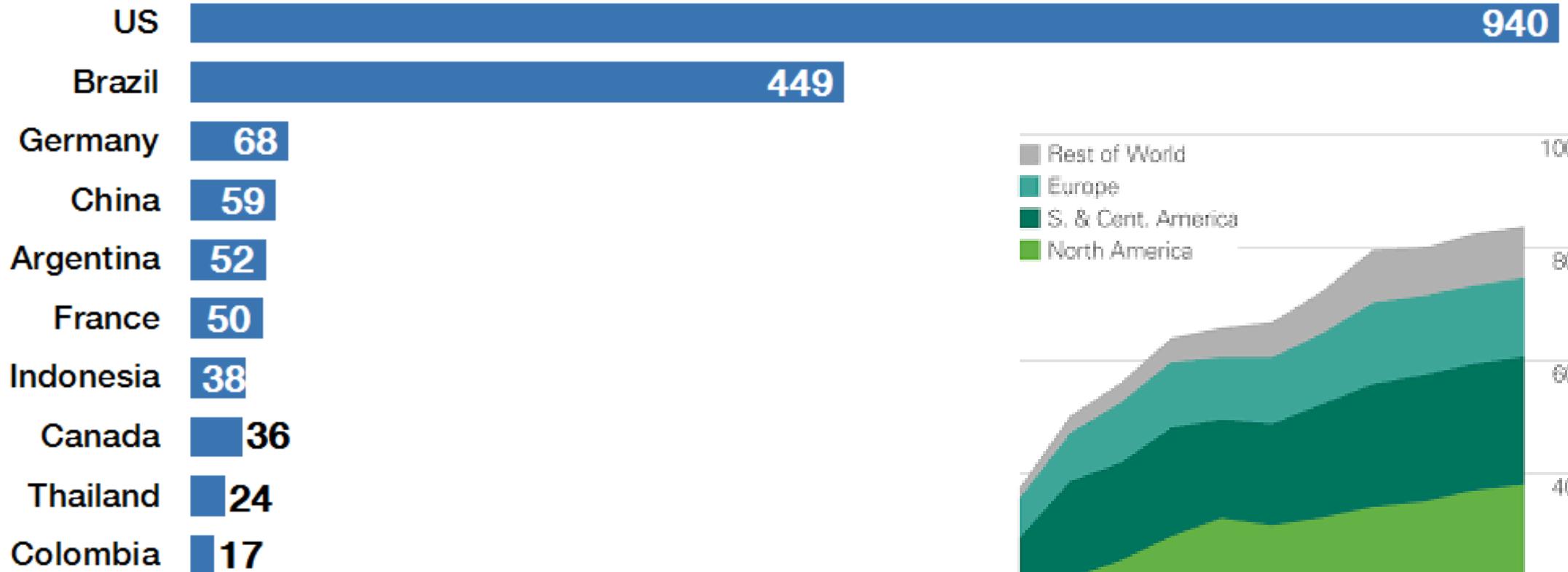
UNINTENTIONAL CONSEQUENCES FOR RESOURCE
INSECURITY

Edited by
Larry Swatuk and Lars Wirkus

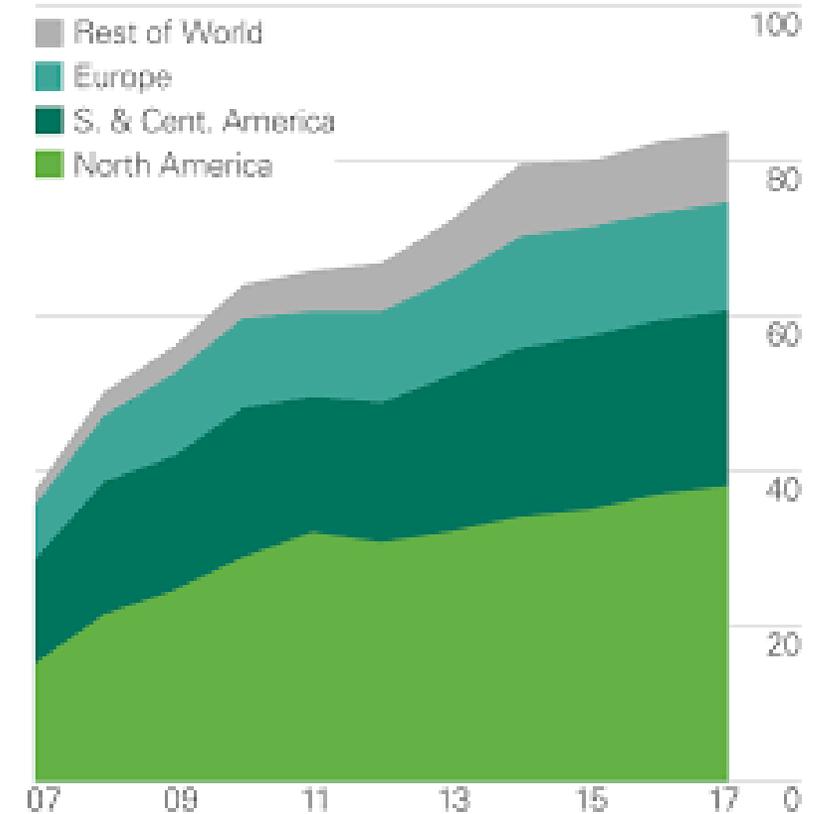


Which country produces the most biofuels?

Total biofuels production (thousand barrels per day)

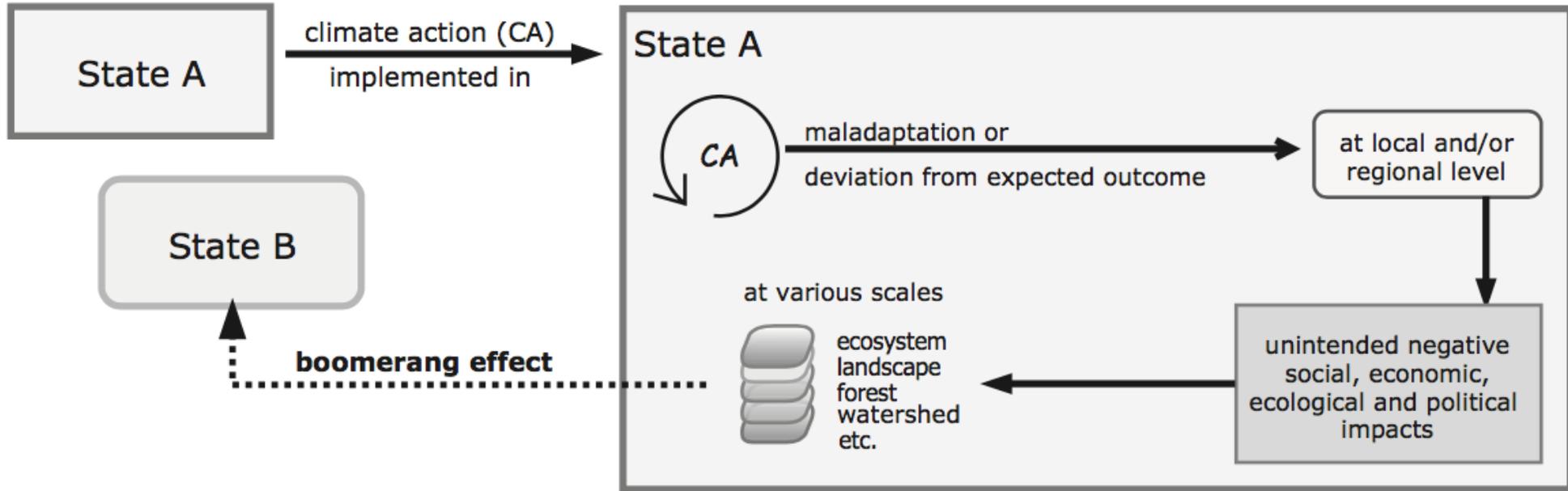
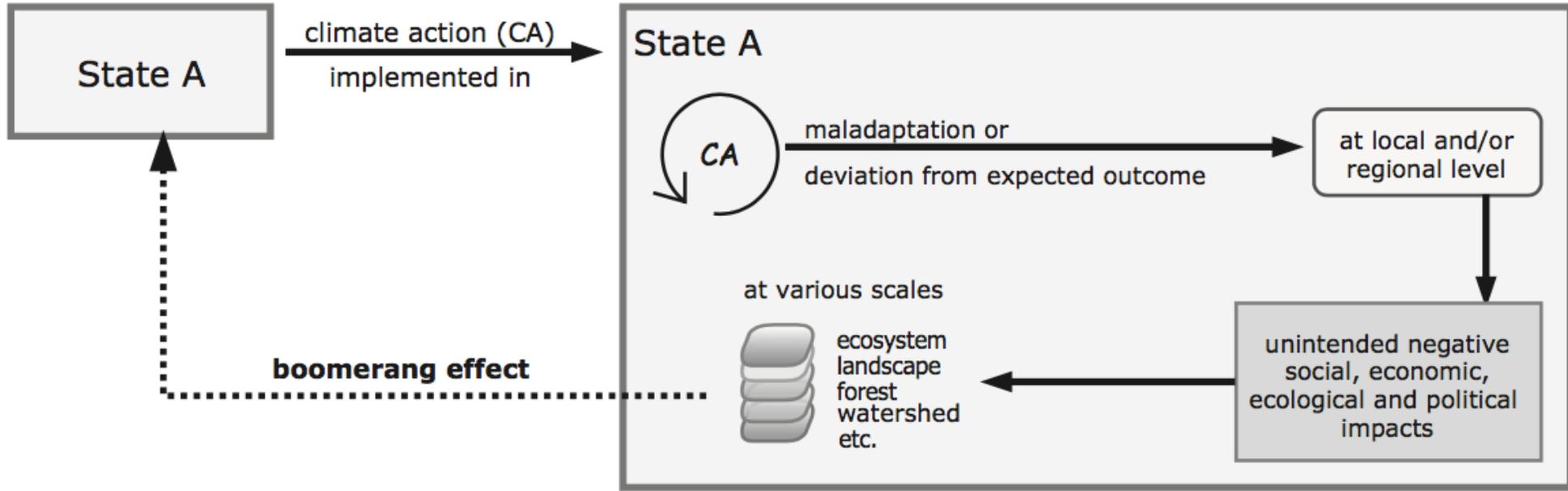


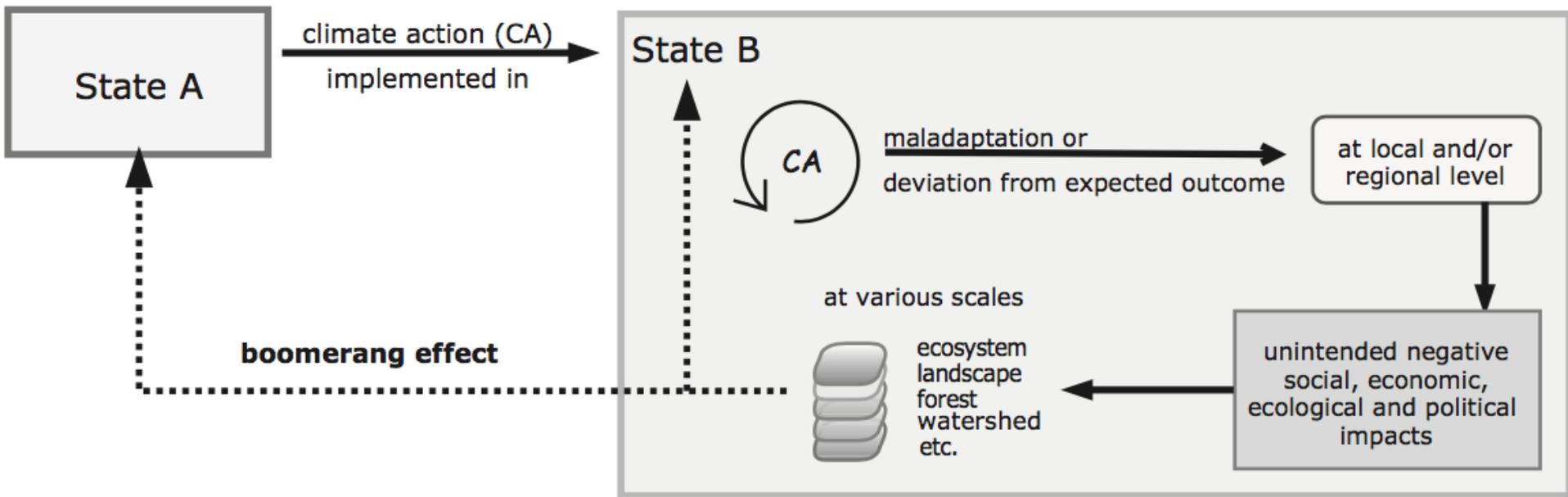
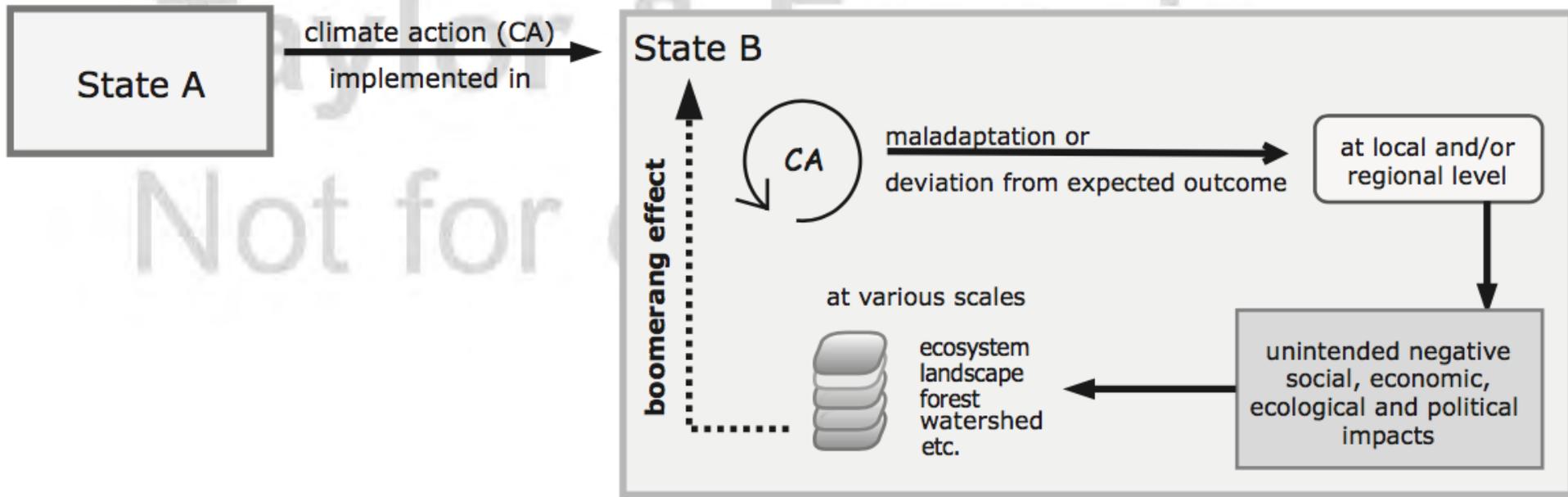
Source: US Energy Information Administration



Definition of 'the Boomerang Effect'

- The emergence of largely unanticipated and unintended negative consequences of climate change adaptation and mitigation policies and programs on domestic non-state actors (LLSEs) **that result in negative feedbacks on the state (SLBEs).**





5 Questions for Exploratory Studies

- What are the (social/economic/ecological/political) drivers behind a particular development or climate intervention?
- What was the decision-making process that led to this specific climate action or development intervention?
- What are the LLSEs (social/economic/ecological/political) of the action and are any of these unintended and/or unanticipated and negative in consequence?
- What are the boomerang effects felt by the state?
- Recognizing that there will always be uneven outcomes and maladaptive practices, what are better processes to minimize negative impacts?

More detailed definition:

- LLSEs: unanticipated and unintended negative social, political, economic, and ecological effects that impact on local communities on various spatial and temporal scales.
- SLBEs: where LLSEs negatively feedback to the state on multiple levels (e.g. local, regional, national), at various scales (e.g. watershed, forest, landscape, ecosystem), with numerous impacts (e.g. political economic instability, social unrest and violence), thus undermining climate security.

10 case studies

- Belo Monte Dam, Brazil
- Farraka Barrage, India
- Three Gorges Dam, China
- Guarani Aquifer, South America
- UN-REDD in Lam Dong, Vietnam
- Drought resistant agriculture in Ghana
- Gigel Gibe III, Ethiopia
- Ilisu Dam, Turkey
- Jordan River Basin, Middle East
- Biofuels development, South Africa

Table 1.1 Local-level side effects and boomerang effects from case studies

Cases		Local-level side effects				State-level boomerang effects		
Country	Action	Social	Economic	Political	Ecological	Economic stability	State authority	Ecological sustainability
Chapter 2: TGD	Dam	1.5 million displaced	Mixed (positive and negative)	Social protest	Dramatic change to aquatic and terrestrial environment	High costs associated with relocation, environmental rehabilitation, etc	None discernible	Government argues multiple benefits from flood management
Chapter 3: Guarani	Aquifer Management Agreement (not activated)	Numerous discrete urban and rural water-supply problems	Business as usual with uneven benefits	Site-specific protests	Worries about aquifer health from poor waste management (cities, farming, mining)	Costs 'normalized'	None discernible	Soil degradation, deforestation, urban sprawl all treated as routine within government departments
Chapter 4: Farakka	Water diversion project (symbol of technological mastery of man over nature)	Small-scale farmers displaced in Bangladesh	GDP impacts from agricultural challenges	Social protest	Dramatic change to dry season ecology	Numerous costs for Bangladesh	None discernible but persistent poor inter-state relations	Dramatic challenges to all in GMB basin
Chapter 5: Belo Monte	Dam	Displacement	Mixed	Social protest	Dramatic changes to aquatic and terrestrial environment	Internationalization of issue has numerous knock-on effects in Brazil	Corruption scandals lead to government change	State announces no further dams in the region

Brazil: Court Suspends Belo Monte Dam License in Victory for Indigenous People

HEADLINE JAN 19, 2016



Matrix of Impacts and Opportunities

- Drivers behind a particular development or climate intervention
 - Development
 - Profit
 - Sustainability
 - Projection of power by the state
 - Social benefit

Matrix cont'd

- Decision-making process?
 - top down
 - In some cases process was more open and inclusive
 - Mostly lacking in transparency and accountability
- LLSEs (social/economic/ecological/political) of the action
 - Many social, economic, ecological and political impacts across the different cases
 - Majority unintended by probably easily foreseen and deemed tolerable by government

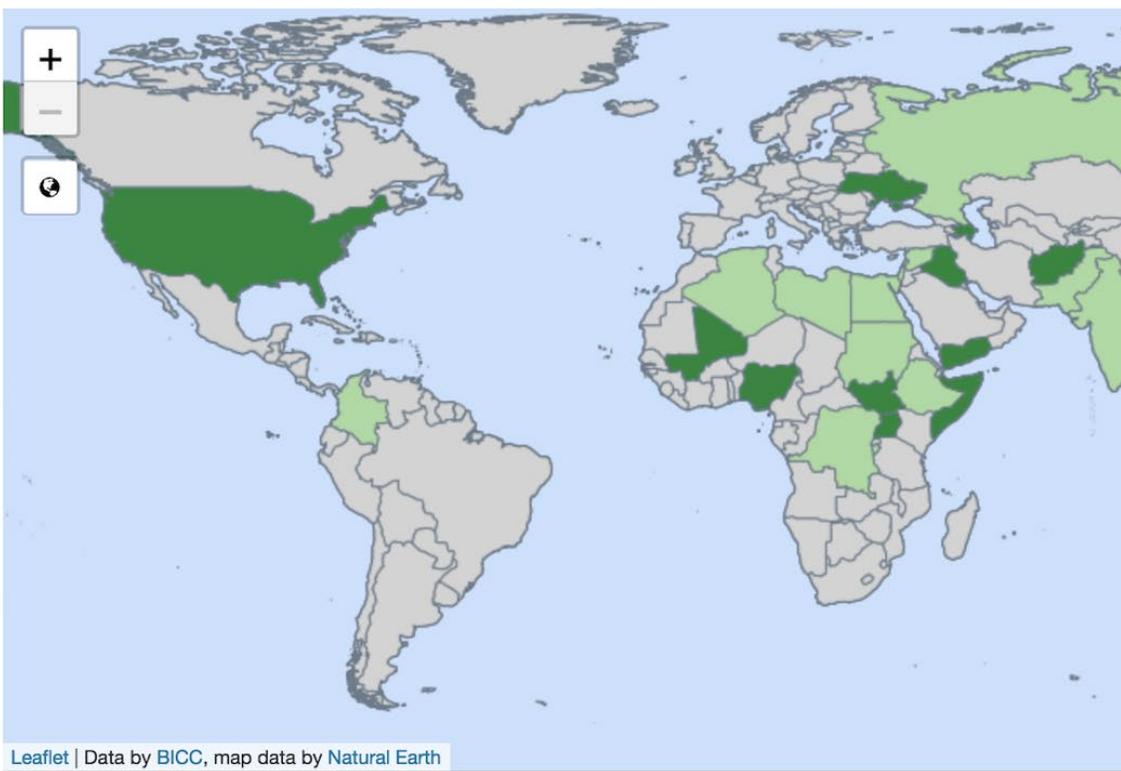
Matrix cont'd

- Boomerang effect?
 - Yes, many economic, social, political and ecological at different scales and intensities
 - All regarded as ultimately tolerable by the state
- Better processes to minimize negative impacts?
 - More participatory and open planning processes
 - Institutional and policy reform
 - Alternatives to the preferred option considered and weighed by all affected by the project/program
 - Appropriately framed to affect positions, interests and needs of all stakeholders

Next Steps: New Project

- Our cases are indicative of outcomes without tracing causal processes, so haven't attempted to operationalize them
- General categories: need to move to specific cases
- Understanding and following decision processes (process tracing)
- Follow new/on-going project to determine causal relations: try to identify and understand the arrangement of indicators that led to LLSEs/SLBEs or not
- Develop a scenario-building 'toolkit'

MODULE
Wars and violent conflicts



Violence, conflicts and war

- Wars and violent conflicts
- Timeline of wars**
- Number of victims of war per 100,000 inhabitants
- Prevalence of conflict
- Child soldiers in conflicts
- Sexual violence in wars

Violent crime

- Number of homicides per 100,000 inhabitants
- Number of robberies per 100,000 inhabitants

State violence

- Death penalty
- Torture
- Amount of state violence against its citizens
- Adherence to the right to physical integrity

Causes of violence

- Political system
- Human Development Index
- Distribution of wealth
- Participation in the political process

Hide layer navigation »

Region/Country



Jahr 2016

Timeline of wars



- ▶ Home
- ▶ **Wars and violent conflicts**
- ▶ In-depth articles
- ▶ Infographics
- ▶ Glossary

Thank You!

