

A stylized map of South America is visible in the background, rendered in shades of blue, yellow, and red against a dark blue background.

Improving food security and rural livelihoods through the use of climate services.

International Forum on Climate Change:
“Impact on the agriculture of Peru”


October 21-24, 2019

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The mission of the IRI is to enhance society's capability to understand, anticipate and manage the impacts of climate in order to improve human welfare and the environment, especially in developing countries.

The IRI conducts this mission through strategic and applied research, education, capacity building, and by providing forecasts and information products with an emphasis on practical and verifiable utility and partnership.

El Fondo Internacional en Cambio Climático:
"Impacto en la agricultura del Perú" INIA-
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Some Challenges for Agriculture in a Changing Climate

- Commitments and funding are at international and national level
- Implementation needs to occur at many levels— How do you ensure support flows downward?
- Weak vs strong ministries
- Right information for right questions
- Some Examples from IRI



CLIMATE SERVICES

Generate climate information: learn from the past, monitor the present and forecast the future.

Translate climate information into material that is relevant to agriculture, public health and other target sectors.

Transfer translated information to appropriate actors, in formats and media most useful to their operations and decisions.

Use information in operational decision processes, policies and plans. Learn what works and what doesn't.

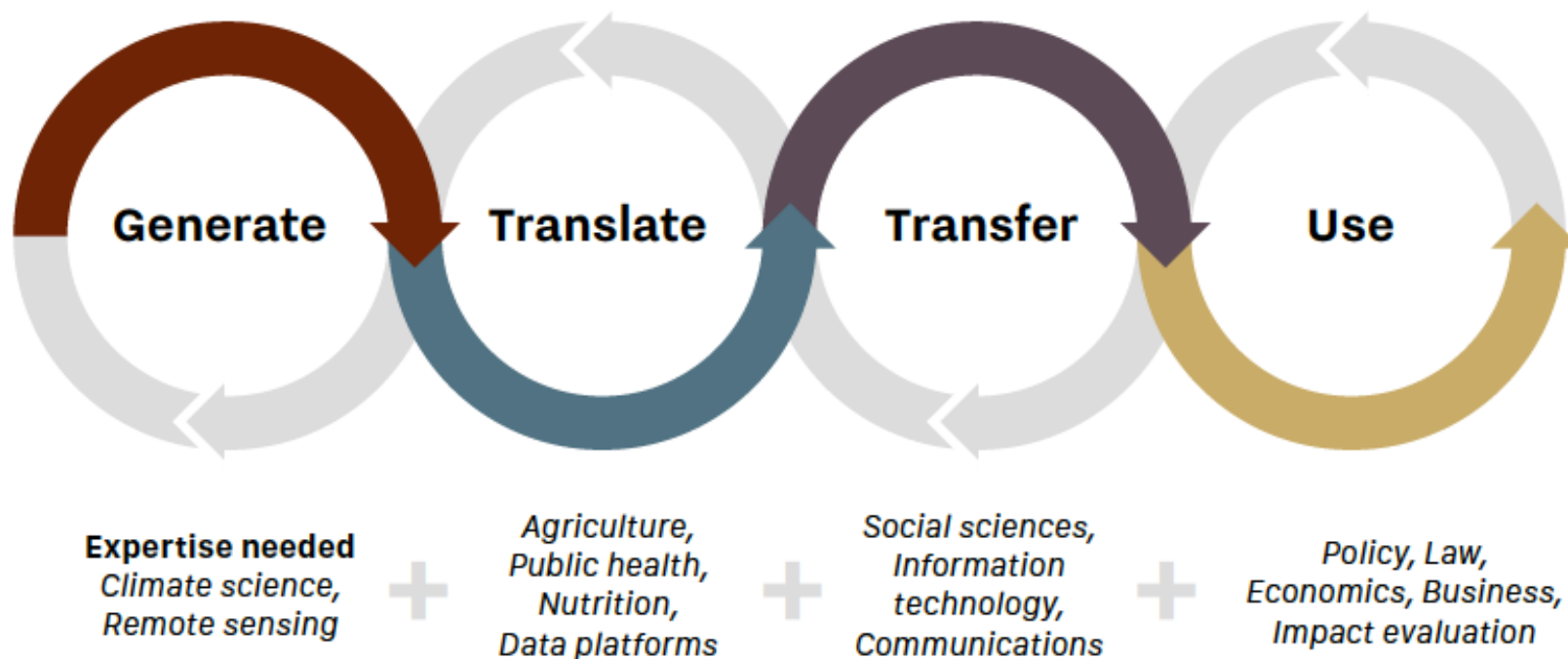


Figure: The schematic indicates the 4 Pillars of climate services. The colored arrows indicate that information flows from left to right, and is enhanced and made more relevant, and finally put to use. The grey arrows indicates feedback and iteration. The text above explains each of the Pillars. The 'Expertise' listed below each Pillar, builds as you proceed from left to right, with considerable multi-disciplinarity required to effectively transfer and use the information.

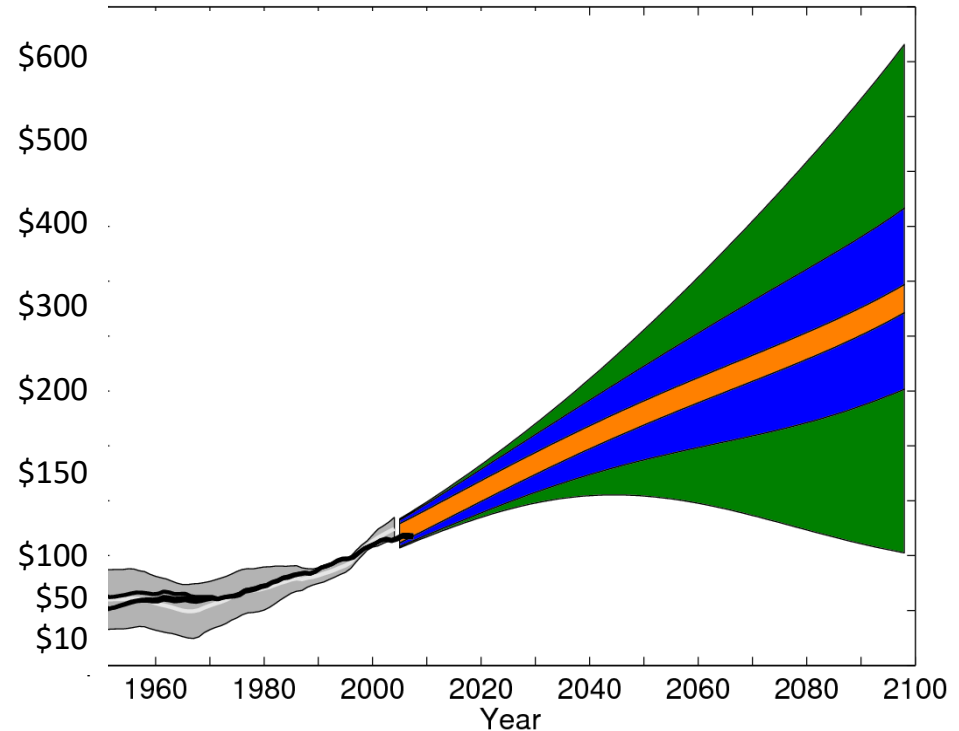
Matching information to decisions

You want to rent a car for 30 days to drive from NYC to Los Angeles

- Option A: Chevy Malibu, 28 MPG, \$35/day
- Option B: Tesla 'S', free charging, \$60/day



Range of possible oil prices to 2100



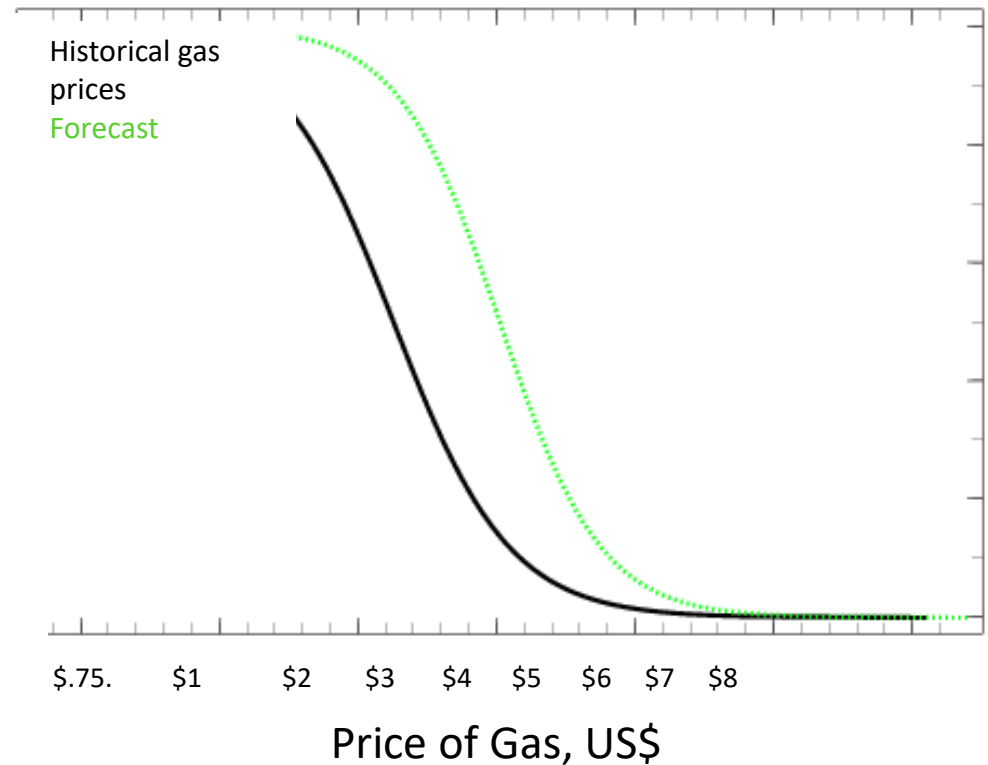
Matching information to decisions

You want to rent a car for 30 days to drive from NYC to Los Angeles, stopping at parks, etc.

- Option A: Chevy Malibu, 28 MPG, \$35/day
- Option B: Tesla 'S', free charging, \$60/day



Probability of exceeding



COP21 and Adaptation

Article 7: Parties establish a global goal on adaptation;

Each Party shall as appropriate, engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include:

- a) The implementation of adaptation actions, undertakings and/or efforts;
- b) The process to formulate and implement national adaptation plans;
- c) The assessment of climate change impacts and vulnerability, with a view to formulating nationally determined prioritized actions, taking into account vulnerable people, places and ecosystems;
- d) Monitoring and evaluating and learning from adaptation plans, policies, programmes and actions; and
- e) Building the resilience of socioeconomic and ecological systems, including through economic diversification and sustainable management of natural resources.

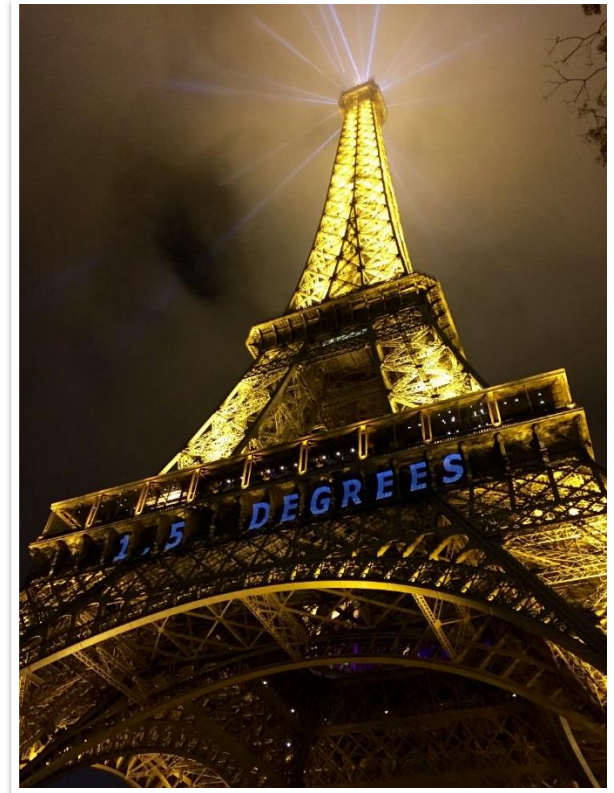


Photo Source:

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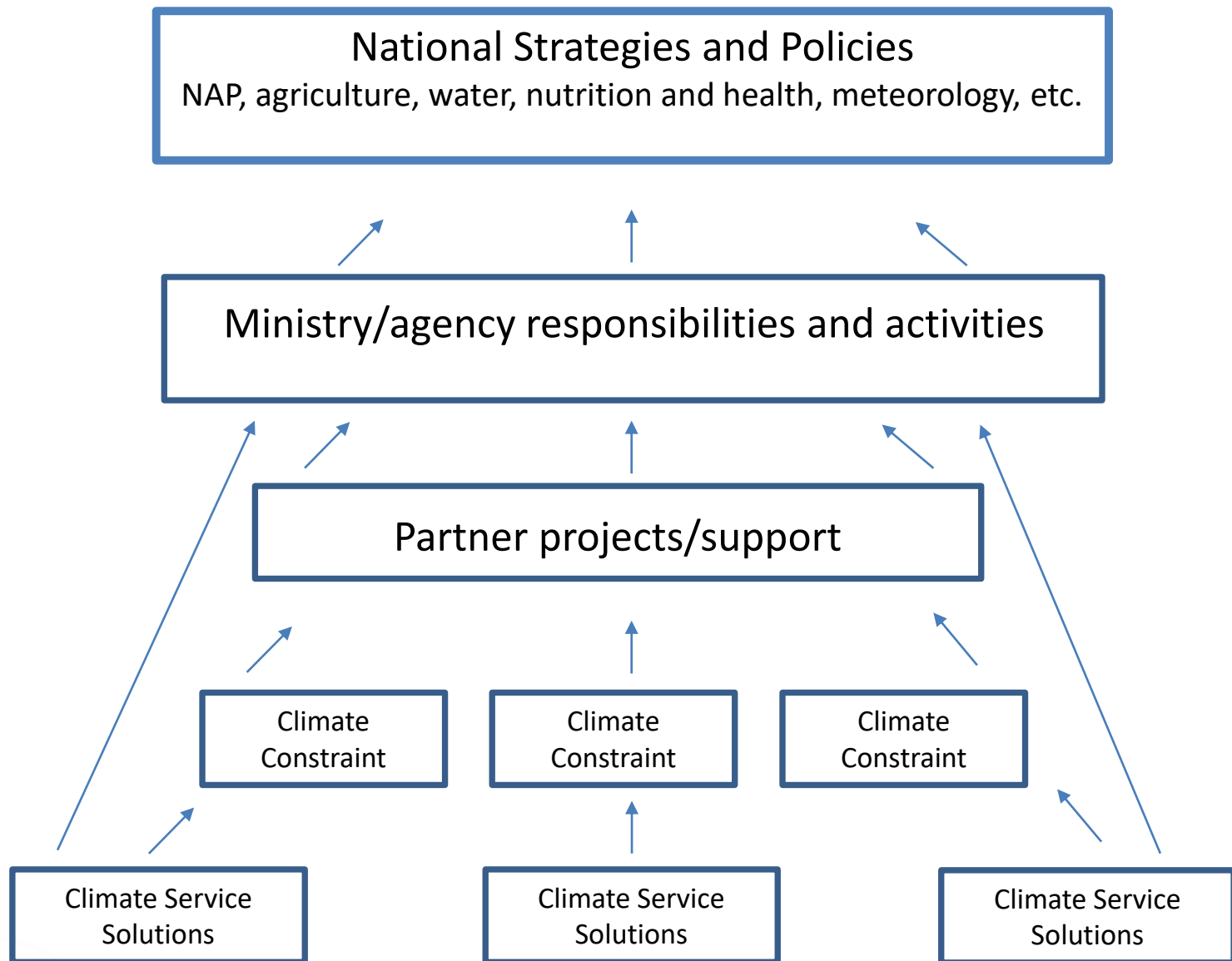
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2015: A Big Year for Climate and Development

SUSTAINABLE DEVELOPMENT GOALS





Peru's national strategy

- Who is responsible?
- Do they have the resources they need?
- Where can they turn for support?

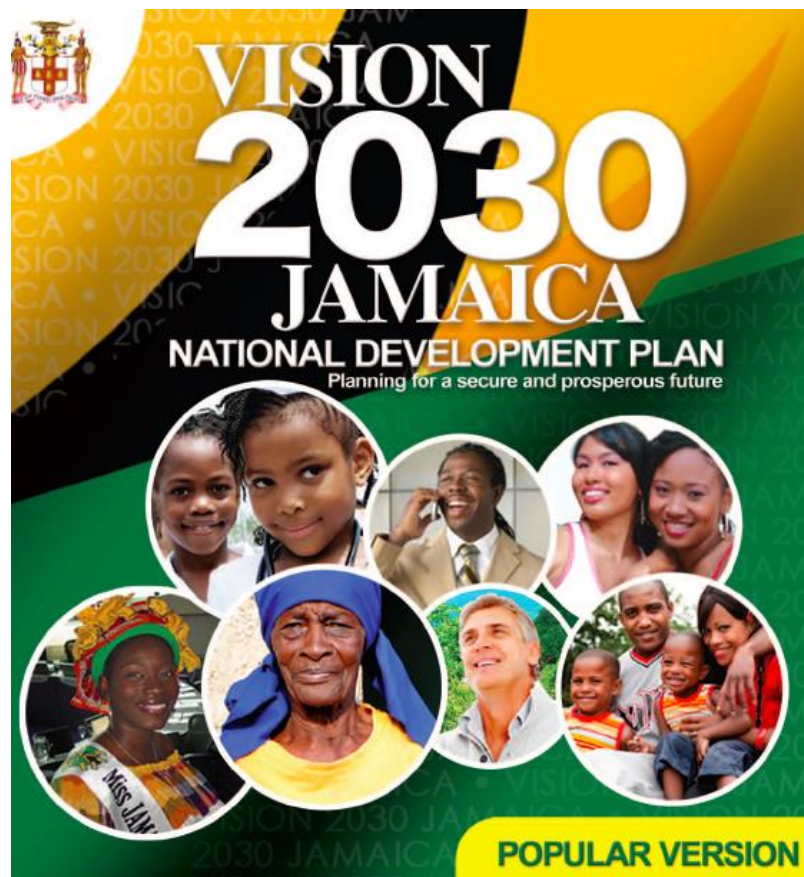


Borrador de la ENCC

ESTRATEGIA NACIONAL *ante el* CAMBIO CLIMÁTICO 2015



Jamaica's Climate Policy



| National Goals | National Outcomes |
|---|--|
| 1 Jamaicans are empowered to achieve their fullest potential | 1. A Healthy and Stable Population |
| | 2. World-Class Education and Training |
| | 3. Effective Social Protection |
| | 4. Authentic and Transformational Culture |
| 2 The Jamaican society is safe, cohesive and just | 5. Security and Safety |
| | 6. Effective Governance |
| 3 Jamaica's economy is prosperous | 7. A Stable Macroeconomy |
| | 8. An Enabling Business Environment |
| | 9. Strong Economic Infrastructure |
| | 10. Energy Security and Efficiency |
| | 11. A Technology-Enabled Society |
| | 12. Internationally Competitive Industry Structures <ul style="list-style-type: none"> • Agriculture • Manufacturing • Mining and Quarrying • Construction • Creative Industries • Sport • Information and Communications Technology • Services • Tourism |
| | 13. Sustainable Management and Use of Environmental and Natural Resources |
| | 14. Hazard Risk Reduction and Adaptation to Climate Change |
| | 15. Sustainable Urban and Rural Development |
| | |
| 4 Jamaica has a healthy natural environment | |
| | |

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3

**Jamaica's
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7. A Stable Macroeconomy

8. An Enabling Business Environment

9. Strong Economic Infrastructure

10. Energy Security and Efficiency

11. A Technology-Enabled Society

12. Internationally Competitive Industry Structures

- Agriculture
- Manufacturing
- Mining and Quarrying
- Construction
- Creative Industries
- Sport
- Information and Communications Technology
- Services
- Tourism

4

**Jamaica has a
healthy natural
environment**

13. Sustainable Management and Use of Environmental and Natural Resources

14. Hazard Risk Reduction and Adaptation to Climate Change

15. Sustainable Urban and Rural Development



Climate Policy For Jamaica: Stakeholder Workshop

July 2012



CLIMATE CHANGE

TOWARDS THE DEVELOPMENT OF A POLICY FRAMEWORK FOR JAMAICA

Kingston, Jamaica / July 26-27, 2012

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With the Climate Change, We Must Change

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Challenges of Ownership and Sustainable Support

“Weak v. powerful” ministries

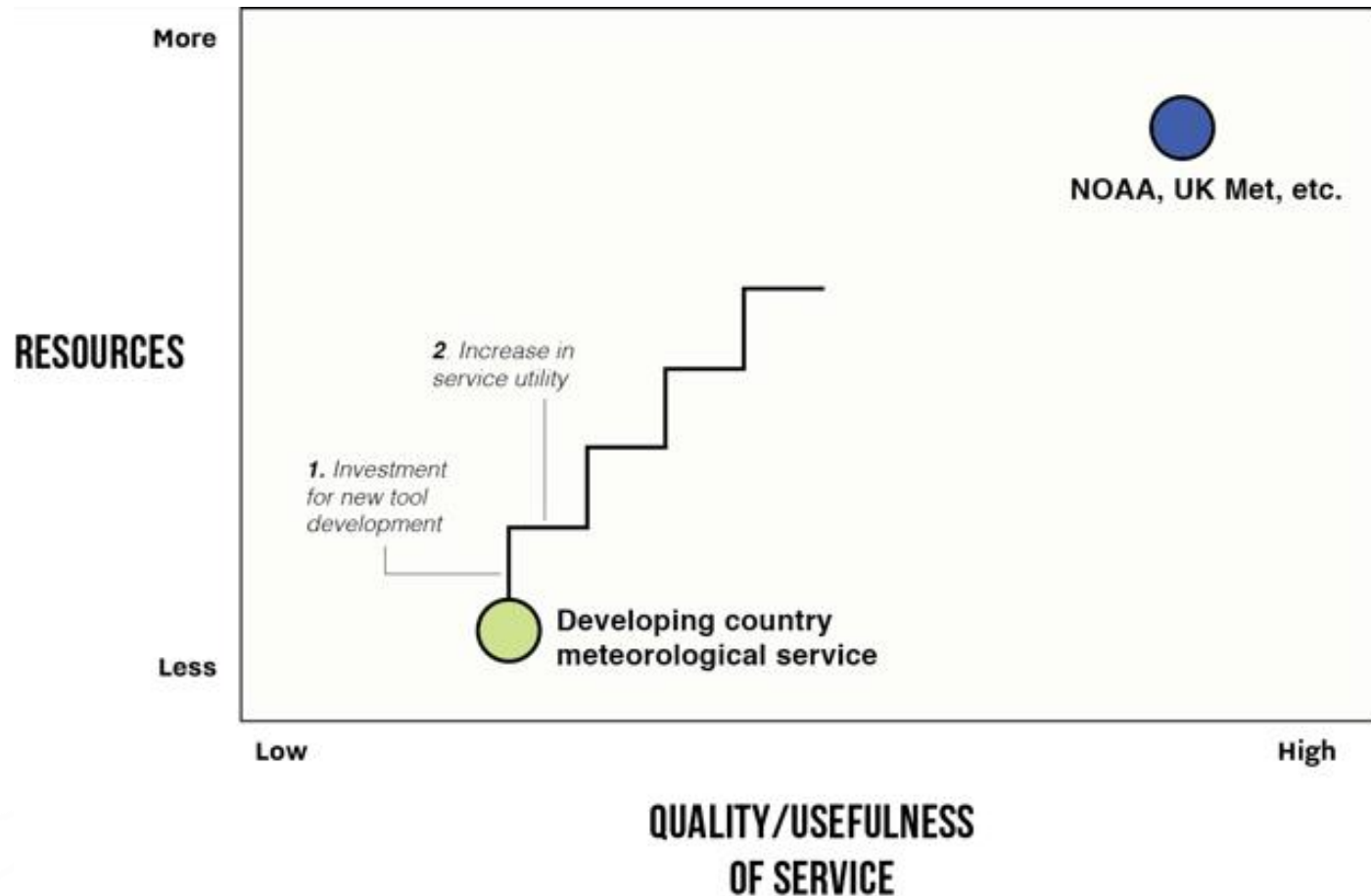
How to create “ownership” of climate risk management?

Three Degrees of Political Support:

- **Expressed commitment:** Verbal declarations of support for the issue of adaptation
- **Institutional commitment:** Policies, organizational support
- **Budgetary commitment:** Resources dedicated to adaptation



Vicious Cycle vs. Growth Curve



Expressed Commitment

“When you invited me to this ... workshop, I asked my staff why you wanted to talk to me instead of Pickersgill [Min. of Env.]. Now I’m going to ask why somebody wasn’t talking to me about climate change twenty years ago.”

- Minister of Finance Peter Phillips after the workshop



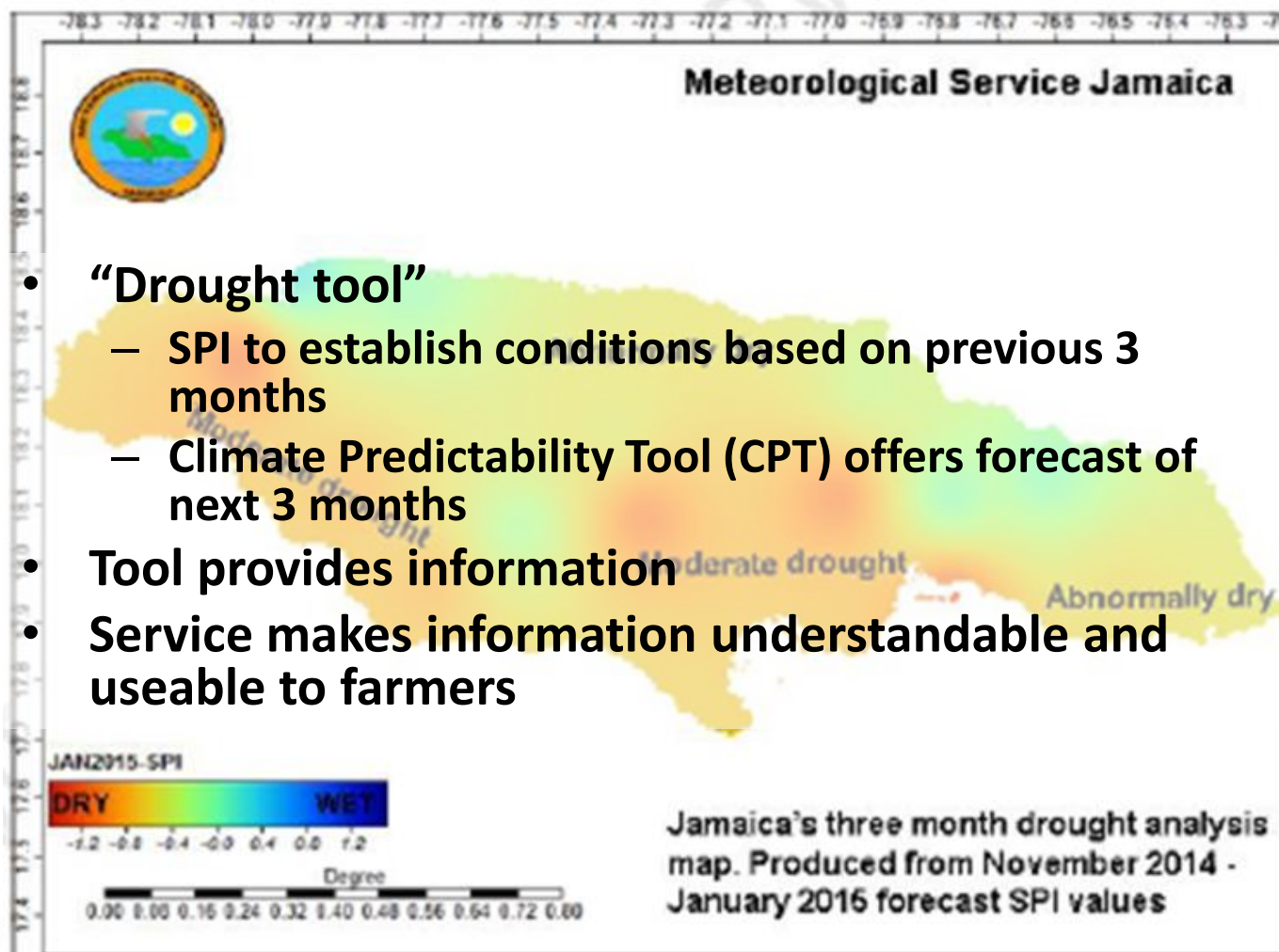
Dr. The Hon. Peter Phillips, M.P., Minister of Finance and Planning

Jamaica Drought Service

- ❖ **2014-2016 Jamaica experienced one of the worst droughts since the 1970s**
- ❖ **It's effect on agriculture and economy have been devastating**
 - **Reported 30% decline in ag production during 2013-2014**
 - **JMS-IRI provided seasonal drought forecast information to over 300 farmers distributed across Jamaica**
- ❖ **Anecdotal stories suggested that the losses in agricultural production may have been greater if not for the information**



Data → Tool → Service



Effects of Drought and Service on Productivity

| | |
|--|-----|
| Reported <u>loss in the value of ag production</u> , nationally | 30% |
| Average <u>ag production</u> loss in sampled farmers | 57% |
| Average loss in the <u>value</u> of ag production in sampled farmers | 31% |
| Average loss in <u>ag production</u> among the farmers with “climate risks” | 72% |
| Average loss in <u>ag production</u> among farmers with “climate risks” attending farmer forum | 46% |
| Average loss in <u>ag production</u> among farmers with “climate risks” attending farmer forum and texts in 2014 | 39% |



A stylized map of the Pacific region, including North America, Central America, and the Caribbean. The map is color-coded with various shades of blue, yellow, and red, likely representing different climate or agricultural zones. The title text is overlaid on the map.

Adapting Agriculture to Climate Today, for Tomorrow



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Columbia World Project:

“How can we at Columbia better connect with the world at-large where laws and policies are made, actions taken, and norms and attitudes shaped?”

- Columbia University President Lee C. Bollinger

ACToday creates climate service solutions that help end hunger, achieve food security, improve nutrition, and promote sustainable agriculture.



GUATEMALA

Pop. 15.5 million
Avg. GDP growth: 3.5%/yr
Agric. GDP: 13%
Agric. employment: 31%
Undernourished: 16%

SENEGAL

Pop. 14.7 million
Avg. GDP growth: 6.7%/yr
Agric. GDP: 17%
Agric. employment: 78%
Undernourished: 25%

BANGLADESH

Pop. 158 million
Avg. GDP growth: 7%/yr
Agric. GDP: 15%
Agric. employment: 47%
Undernourished: 16%

COLOMBIA

Pop. 47.7 million
Avg. GDP growth: 2.3%/yr
Agric. GDP: 7.4%
Agric. employment: 17%
Undernourished: 9%

ETHIOPIA

Pop. 105 million
Avg. GDP growth: 9%/yr
Agric. GDP: 36%
Agric. employment: 73%
Undernourished: 32%

VIETNAM

Pop. 98 million
Avg. GDP growth: 6.4%/yr
Agric. GDP: 16%
Agric. employment: 48%
Undernourished: 11%

Total population of ACToday countries: 439 million

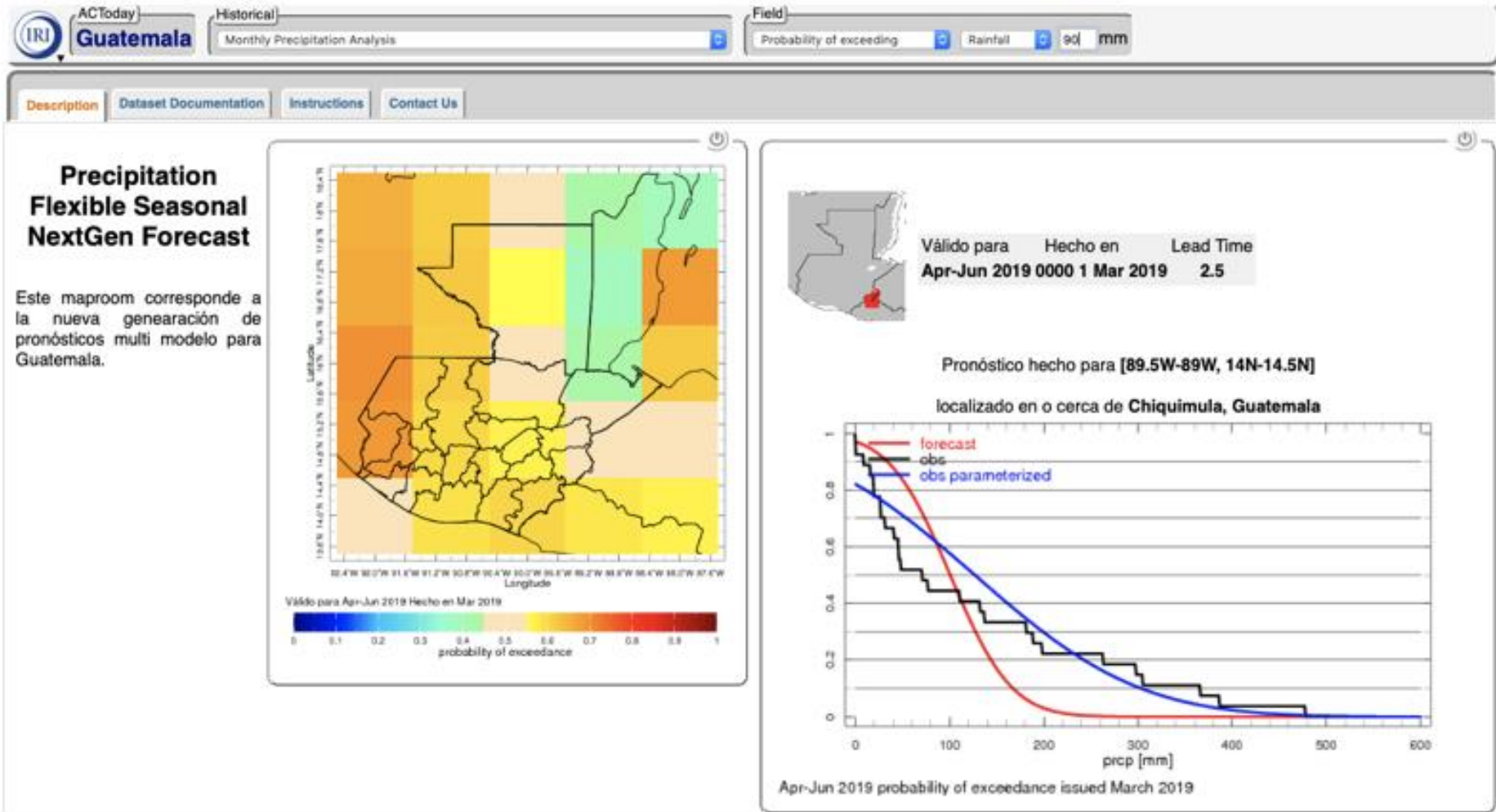
Economy and population figures: CIA World FactBook

Undernourishment figures are for 2014: Global Nutrition Report 2017

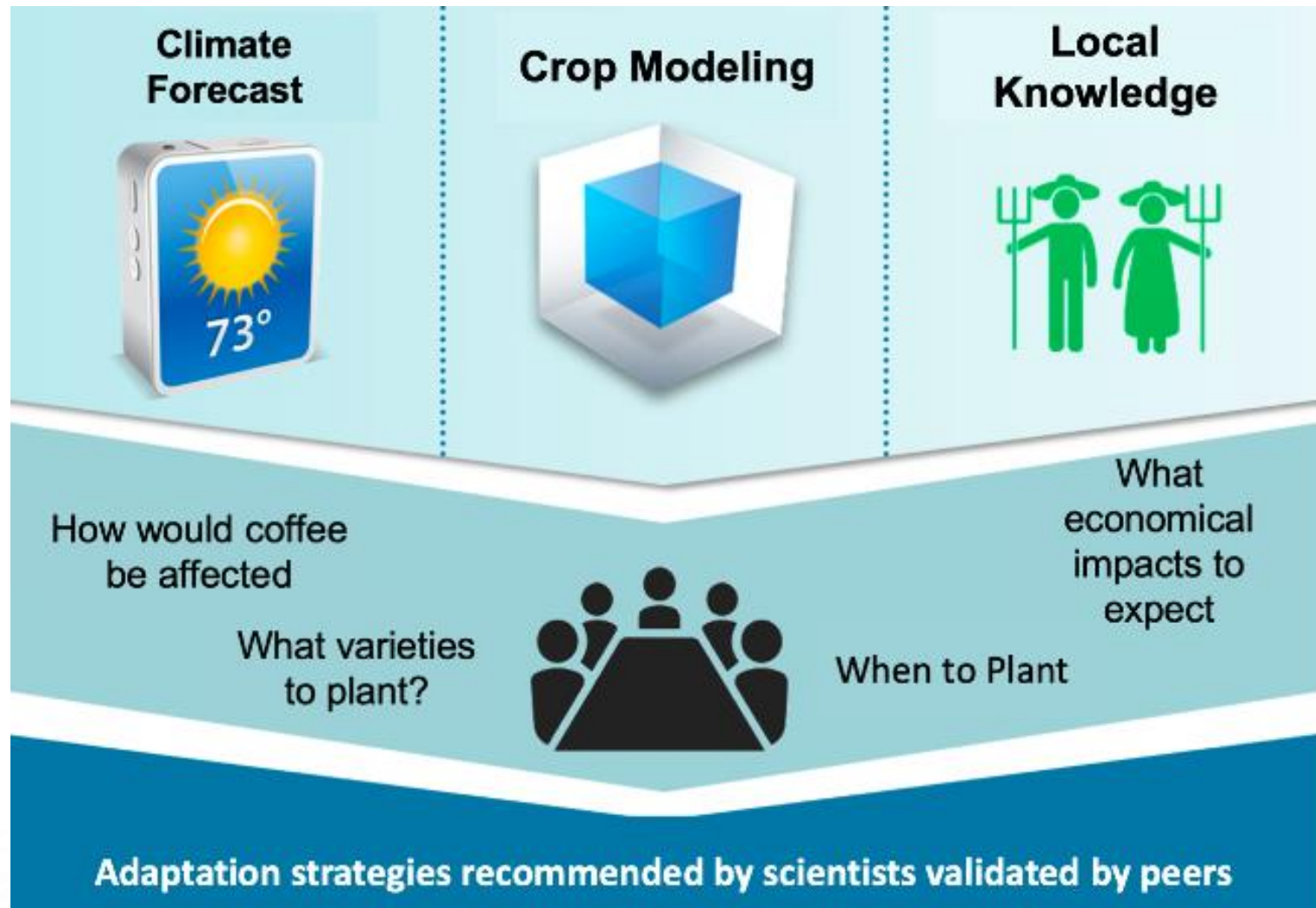


Maprooms for decision support

The system provides both spatial maps with deterministic values and



Connecting Levels of Support



Thank You

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