Building good climate services for adaptation: Lessons learned

COP22, Marrakesh, 16 November, 2016

Panelists:	**Katiuscia Fara – World Food Programme**
	Graham Clarkson - University of Reading
	Amy Barthorpe – WeFarm
	Xolisa Ngwadla - CSIR
	Richard Jones - UK Met Office
	Sukaina Bharwani – Stockholm Environment Institute
Facilitator:	**Aaron Atteridge – Stockholm Environment Institute**

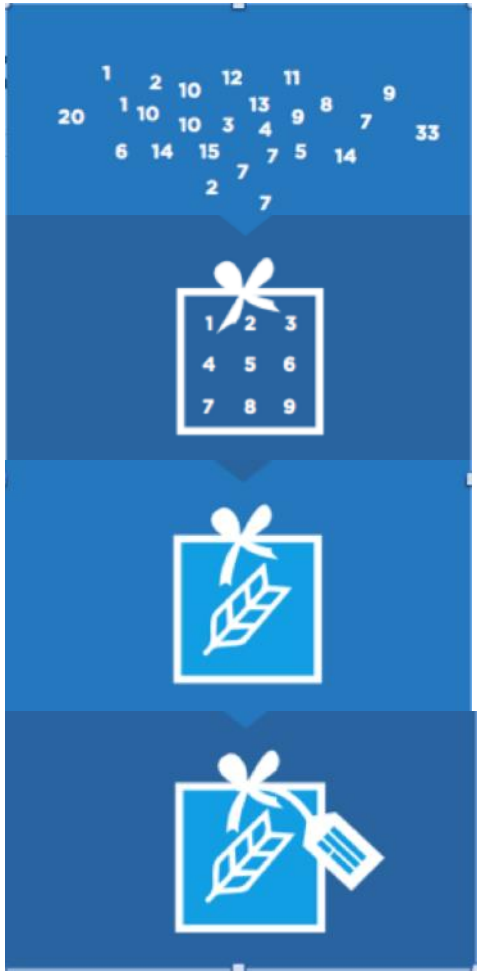
Credit for images: Climate Knowledge Brokers Manifesto, Florian Bauer and James Smith (2015).

What are climate services?

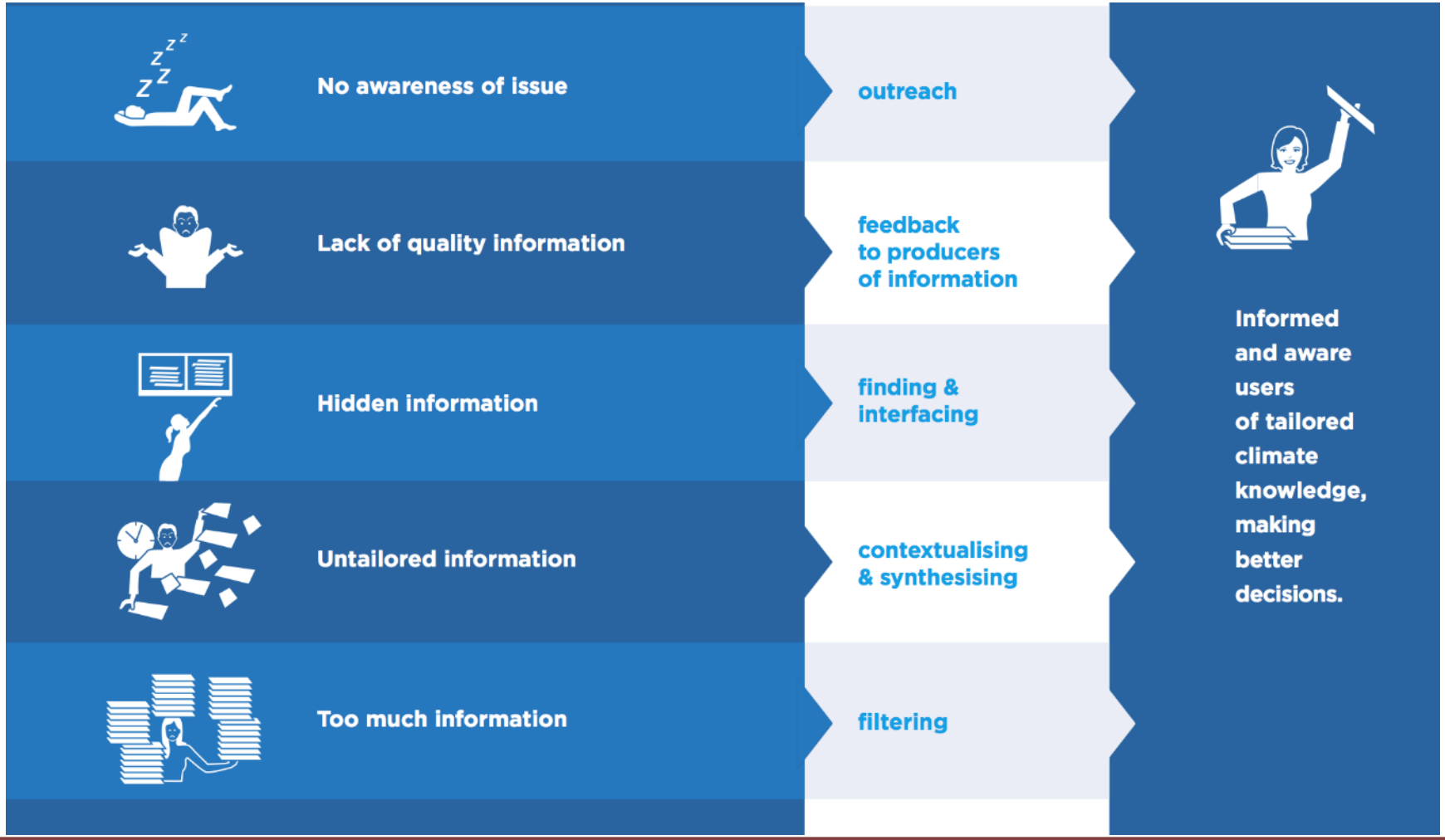
Climate services is an emerging field that aims to bridge the gap between climate science, policy and practice.

Involves the **timely production, tailoring, translation** and **transformation** of climate information

Packaging information to ensure that the **most relevant knowledge** is **effectively communicated, easily accessed** and **interpreted**.



Response to various challenges



Climate Service users

- national decision-makers
- technical advisors
- sectoral planners
- city and district-level authorities
- businesses (global to local)
- households
- farmers

Heatwave Plan for England

- Public Health England wrote the plan for:
  - The NHS, local authorities, social care, and other public agencies.
  - Professionals working with people at risk
  - Individuals, local communities and voluntary groups
  - Heath-Health Watch System
  - 1 June-15 September

Rapid urban growth in a changing climate

- **Decision maker:** Urban planner for a fast-growing city
- **Decision context:** Planning for big changes in development paths and climate trends with limited resources to address them.
- **Time-scale:** 5-40 years
- **Examples of information needed:**

  How will climate change affect our city infrastructure?

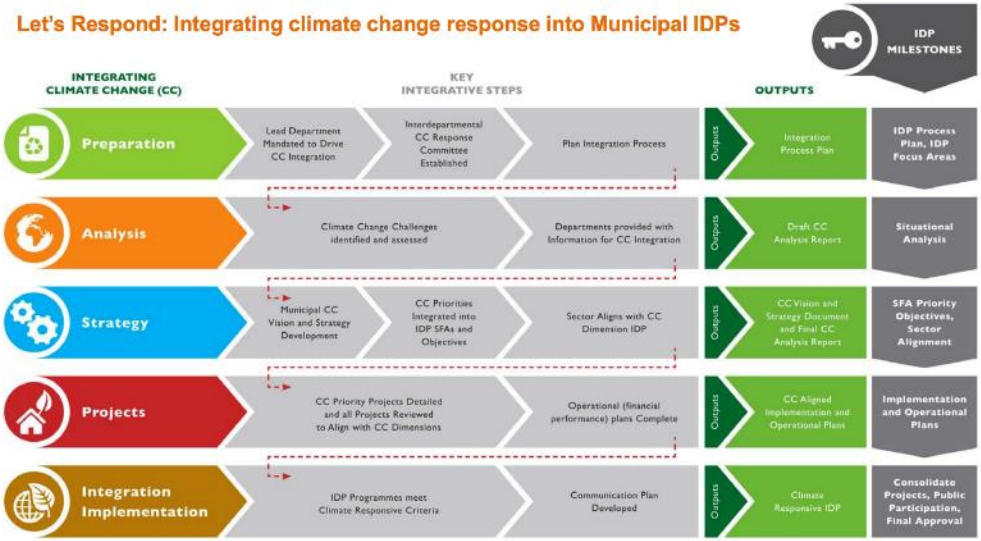
  Who and what will be most impacted, and how can I find out?

  What will these changes mean for our current rates of growth and development?

  Will the infrastructure investments we are making now withstand these changes?

  Who has the missing data I need to answer these questions?

  How reliable is the data I already have?



How do we deliver this?

Ideally climate services draw on a **variety of sources** from scientific research, meteorological, hydrological and climate models, to practical experience and local / indigenous knowledge.

They should also involve the process of **co-producing** knowledge.

Building the necessary skills and **capacities** of different user groups to integrate climate information in their decision-making.

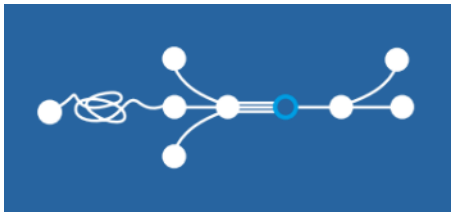
Using **intermediary organisations** or **"knowledge brokers"** to do the translating, tailoring, packaging and communicating…. "adding value" to the information for users.

SEI Initiative on Climate Services

Major gaps

- Inability to identify and understand user needs
- Relationship-building and lack of feedback between users and providers
- Misinterpretation of climate information

SEI Initiative on Climate Services



Taking an integrated holistic approach

Narrowing the "climate information usability gap"

- moving from "useful" → "usable" and "actionable" information

and the processes required to do this.

- This will be achieved through research on the effectiveness of different methods of co-exploration and co-production, decision-making methods, communication and capacity building.

- E.g. innovative use of 'learning labs' to bring decision-makers and climate scientists together to **co-explore** climate information needs.

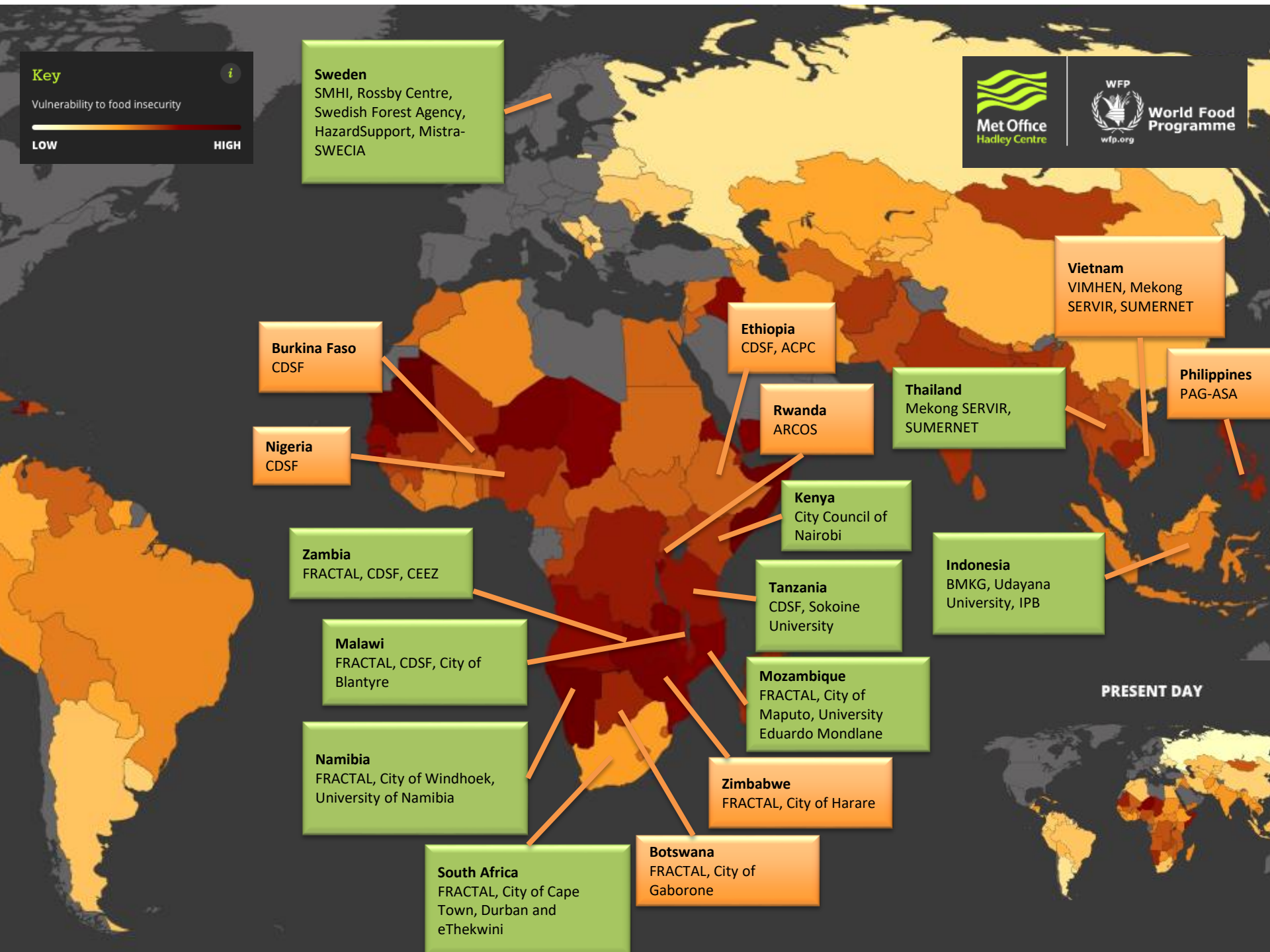
SEI Participatory Framework for Climate Services (PFCS)

- A **research framework** will be developed for:

  the improved ***design, use and interpretation*** of climate services applying a **user-oriented, decision-driven and science-informed** approach.

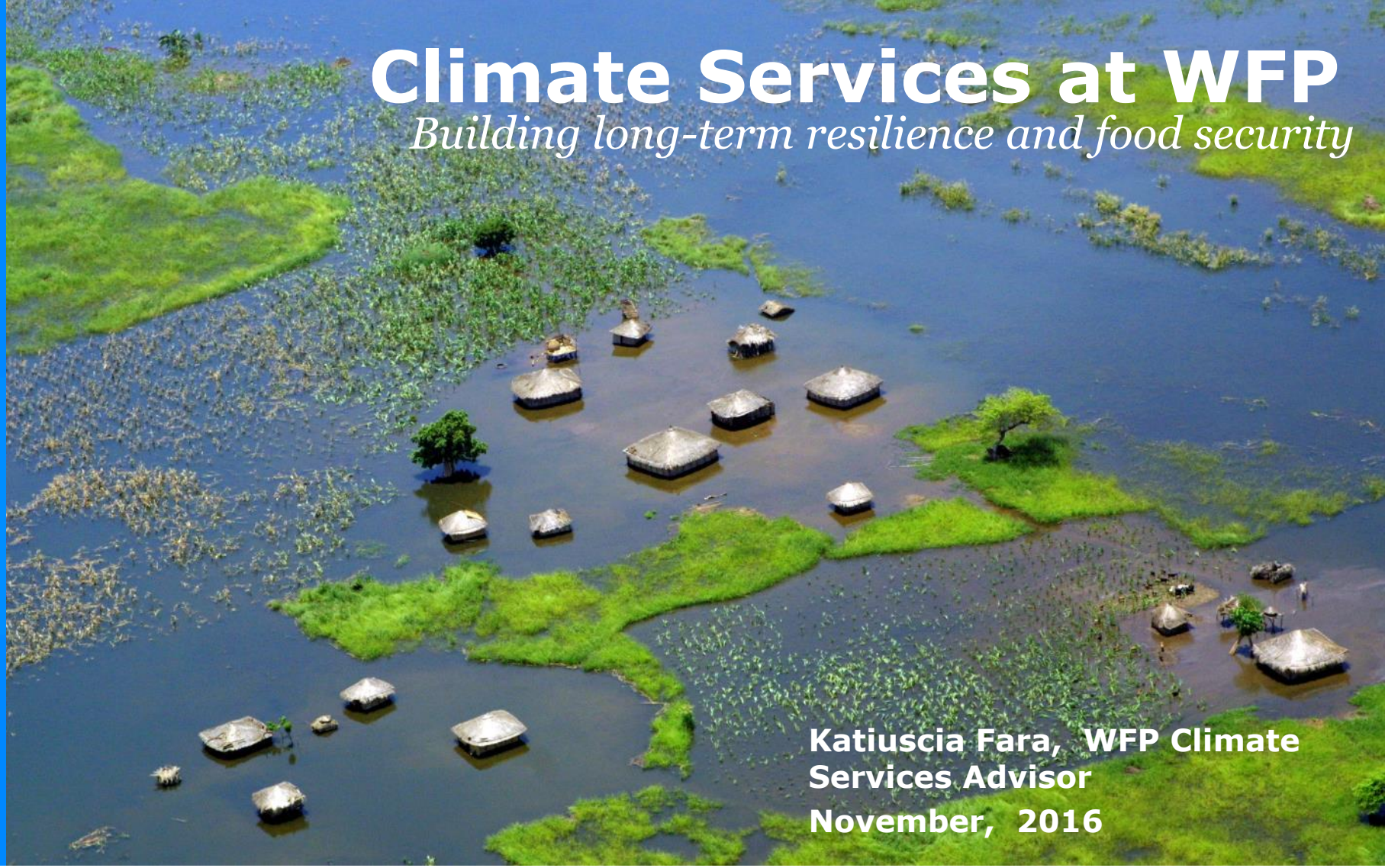
- This will also be translated into online guidance with **training and capacity building** for **users, intermediaries and providers**.

- This is being supported by a community of climate services research and practice on weADAPT and its online space, "Using climate information" www.weadapt.org/using-climate-information


Key
Vulnerability to food insecurity
LOW
HIGH
Sweden
SMHI, Rossby Centre, Swedish Forest Agency, HazardSupport, Mistra-SWECIA
Met Office
Hadley Centre
WFP
World Food Programme
wfp.org
Vietnam
VIMHEN, Mekong SERVIR, SUMERNET
Ethiopia
CDSF, ACPC
Burkina Faso
CDSF
Philippines
PAG-ASA
Thailand
Mekong SERVIR, SUMERNET
Rwanda
ARCOS
Nigeria
CDSF
Kenya
City Council of Nairobi
Zambia
FRACTAL, CDSF, CEEZ
Indonesia
BMKG, Udayana University, IPB
Tanzania
CDSF, Sokoine University
Malawi
FRACTAL, CDSF, City of Blantyre
Mozambique
FRACTAL, City of Maputo, University Eduardo Mondlane
PRESENT DAY
Namibia
FRACTAL, City of Windhoek, University of Namibia
Zimbabwe
FRACTAL, City of Harare
Botswana
FRACTAL, City of Gaborone
South Africa
FRACTAL, City of Cape Town, Durban and eThekwini

Climate Services at WFP

Building long-term resilience and food security



Katiuscia Fara, WFP Climate Services Advisor

November, 2016

WFP

World Food Programme

wfp.org

WFP AND CLIMATE CHANGE

WFP
wfp.org

WFP CLIMATE RESILIENCE INNOVATIONS:

- Analyse the links between climate change and hunger for better policy and programming
- Help people diversify their livelihoods
- Protect assets, incomes and crops with insurance and savings
- Improve access to markets
- Help governments and communities make more informed decisions with better climate forecasts

IN 2015...

14.5

million people received WFP food as an incentive to build assets that reduce the risk of climate disasters and build resilience

IN THE LAST FIVE YEARS...

40

percent of WFP's operations included activities to reduce disaster risk, build resilience or help people adapt to climate change

IN THE LAST DECADE...

ALMOST HALF

of WFP emergency and recovery operations were for climate disasters and had a combined budget of USD 23 billion

www.wfp.org/climate-change

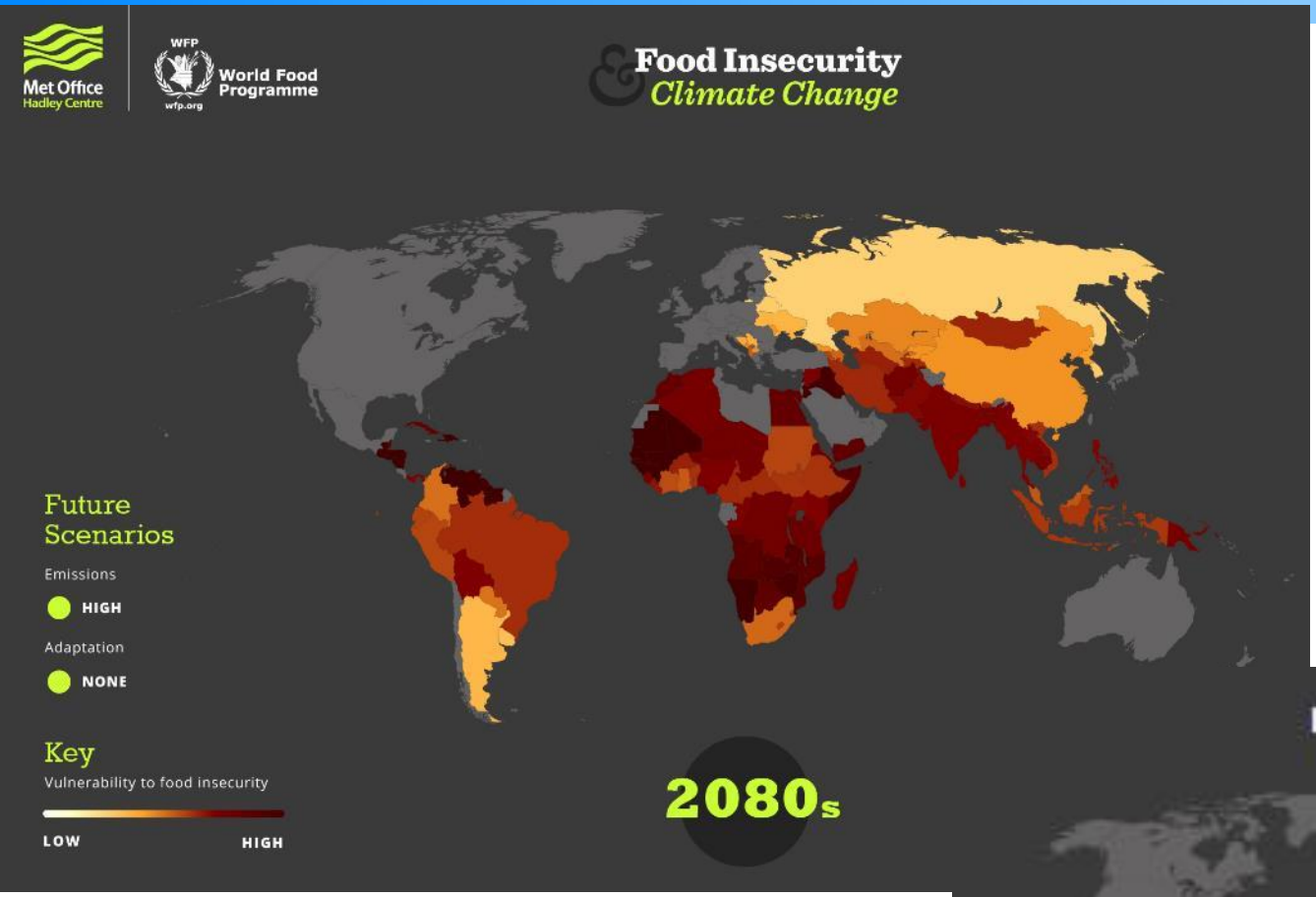
Responding to the climate challenge

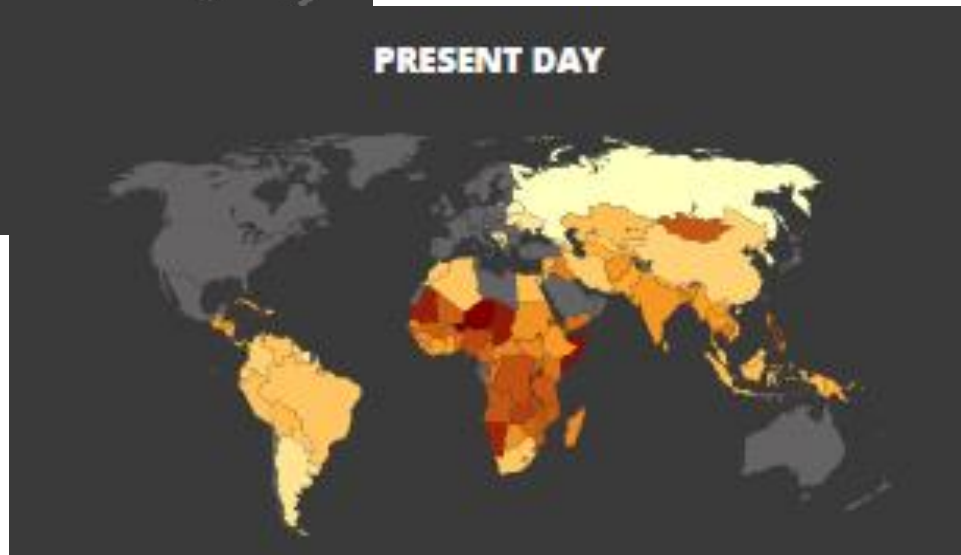
- Climate services are crucial to WFP climate resilience work
- better climate information for **planning**, **early warning** and informed **early action** are essential for achieving food security and building resilience
- WFP is both a producer and user of climate information
- Translation of complex climatic information into easy-to-understand information that is accessible and actionable to help governments and vulnerable communities

WFP and climate services

- WFP Seasonal monitor
- Early Warnings - short-term and seasonal weather hazard information to field staff
- Global and National level Analysis work
- **GFCS Adaptation Programme for Africa initiative** - in Tanzania and Malawi
- SAPARM - piloting the use of custom grazing maps developed through the LEAP platform in Ethiopia
- R4 – Rural Resilience Initiative
- **FoodSECu**RE - early action by using seasonal climate forecasts to trigger funding for community-level activities

A Window into the Future





WFP work – climate services

FoodSECuRe – responding to El Nino

- Strengthening farmers resilience before climate shocks occur through early action

WFP experience with climate services – Needs & lessons learnt

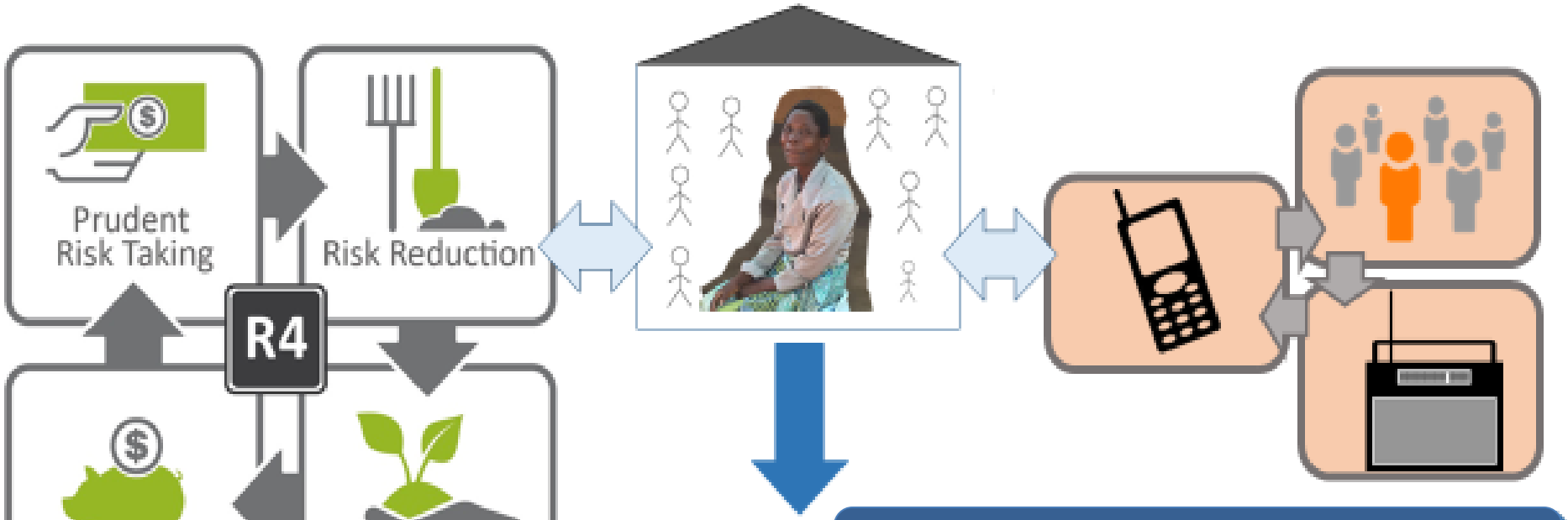
- Need to strengthen dialogue between the generators and users of climatic information
- Better understanding of climate change impacts on nutrition and food security
- Better understanding of users' needs - different users need different information and at different times/scale

Lessons Learnt

- It starts with the users…how do they make decisions?
- Gaps in basic CS provision at community level – need for information that is reliable & easy to understand
- Traditional knowledge remains central for decision making, but it is becoming increasingly unreliable. **Farmers trust farmers first**
- Importance of taking into account gender, cultural norms

You need an in integrated approach

WFP is working to help farmers, like Katalina, become food and nutrition secure



R4 Rural Resilience Initiative

Increase Resilience through:

- Reduced losses
- Adaptive capacity
- Flexibility

.....more lessons Learnt

- Partnerships are key – it is not a one organization job
- Formal processes or mechanisms are needed to inform CS and enable a two-way dialogue
- Importance of co-production of knowledge and information: need to create space for this to happen
- Monitor and evaluate uptake and usefulness is crucial

Thank you!

World Food Programme

https://www.wfp.org/climate-change

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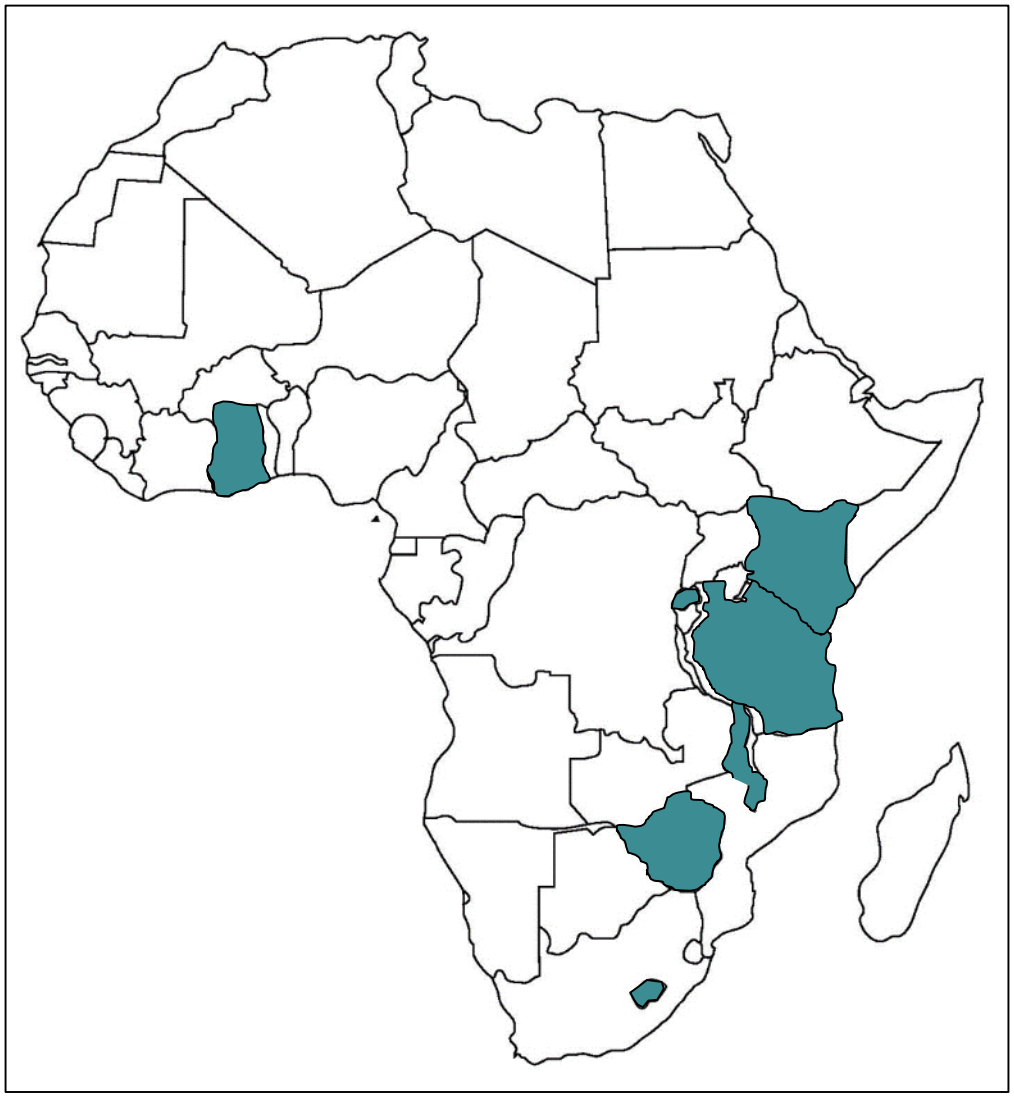
Participatory Integrated Climate Services for Agriculture

PICSA

Graham Clarkson, Peter Dorward, Roger Stern



- Zimbabwe
- Tanzania
- Kenya
- Malawi
- Ghana
- Rwanda
- Lesotho

RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CGIAR

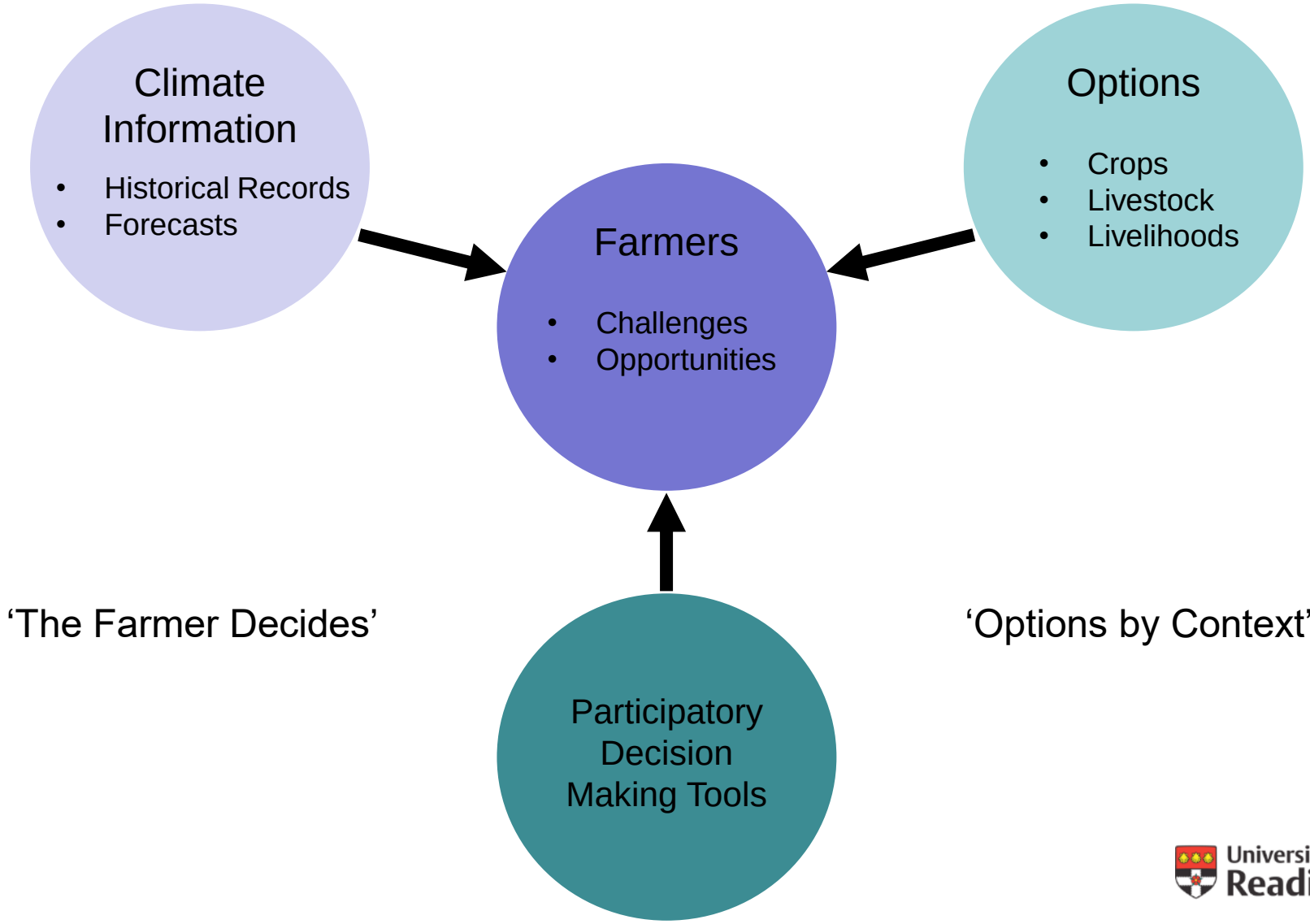
CCAFS

WFP

wfp.org

University of Reading

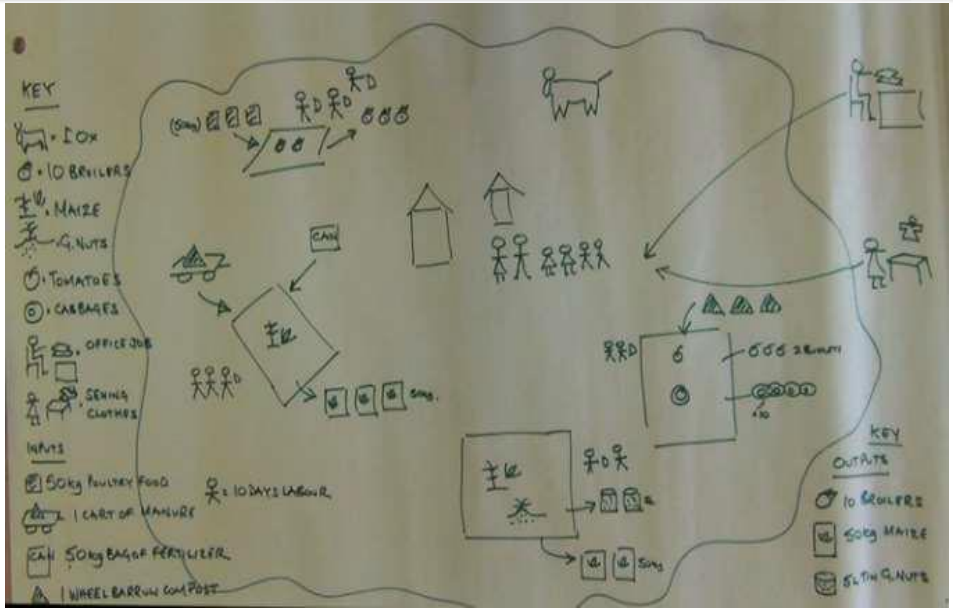
PICSA

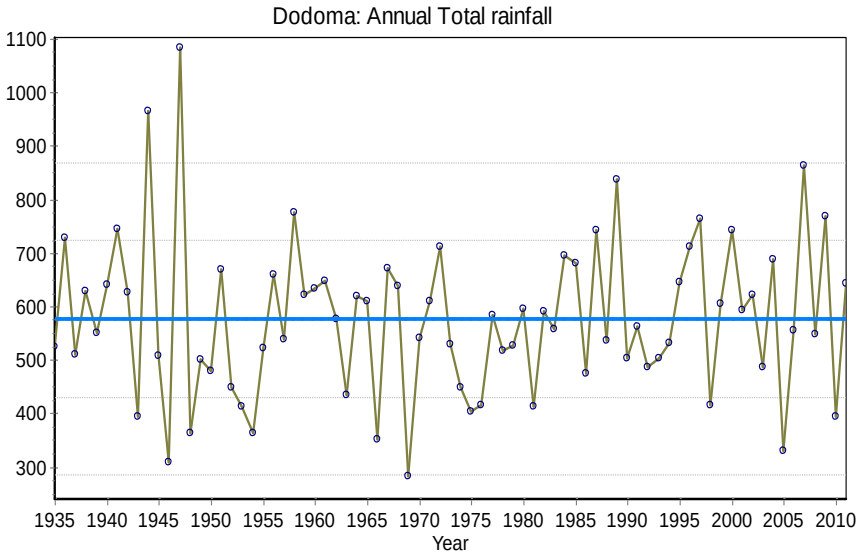


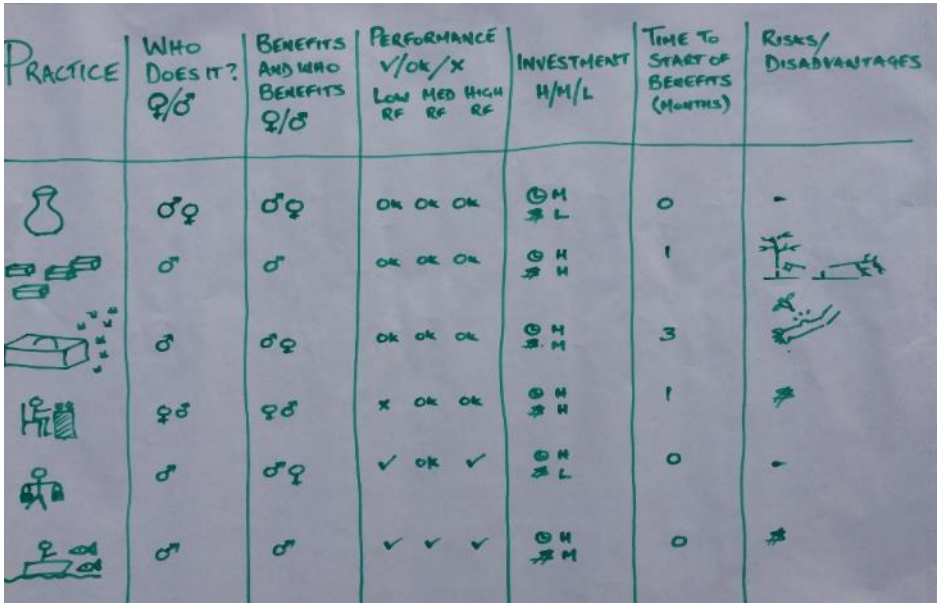
‘The Farmer Decides’

‘Options by Context’

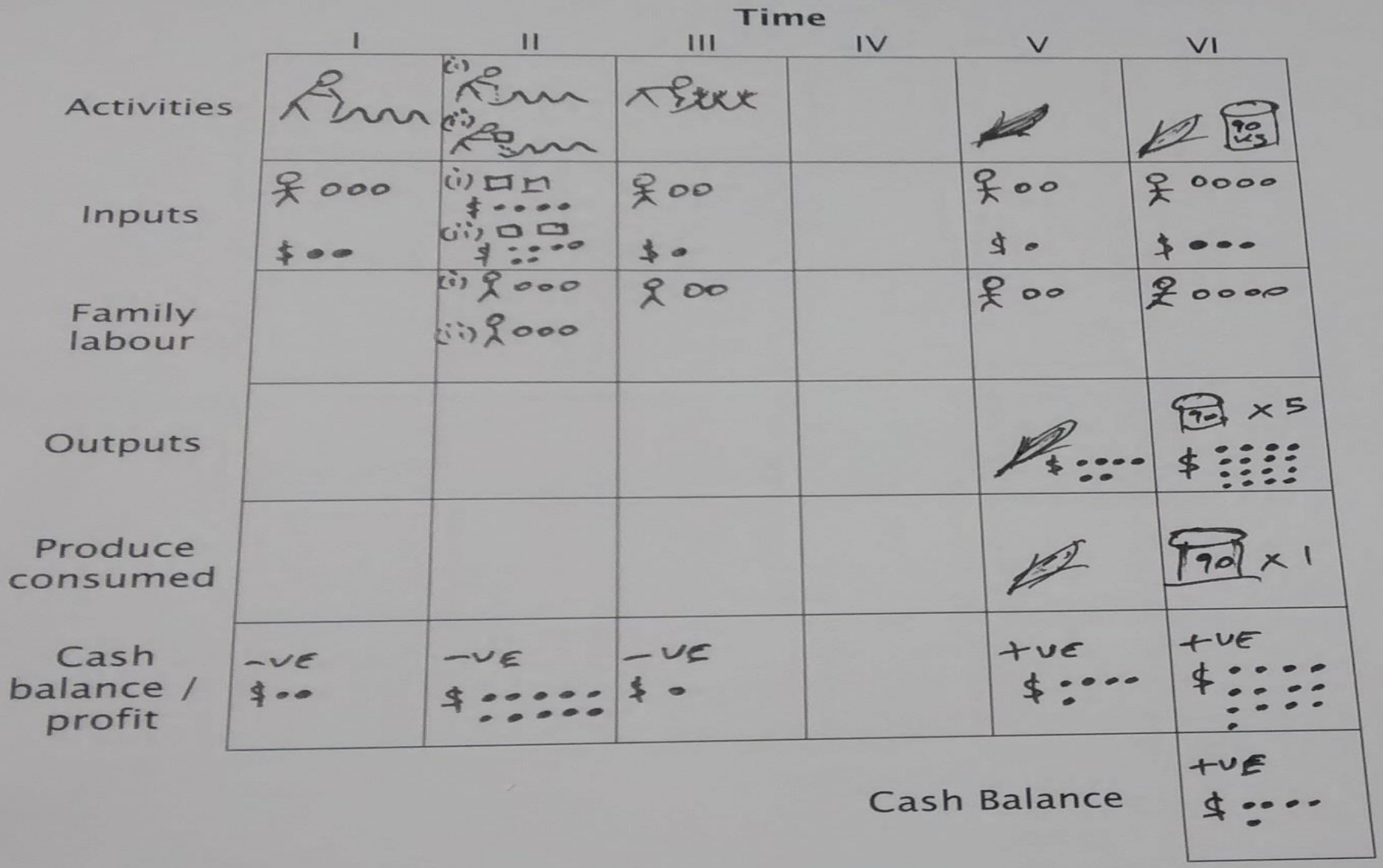

Choice
N SOAP


KEY
1 OX
10 BROILERS
MAIZE
G.NUTS
TOMATOES
CABBAGES
OFFICE JOB
SEWING CLOTHES
INPUTS
50kg POULTRY FOOD
1 CART OF MANURE
50kg BAG OF FERTILIZER
1 WHEELBARROW COMPOST
10 DAYS LABOUR
CAN
KEY
OUTPUTS
10 BROILERS
50kg MAIZE


Dodoma: Annual Total rainfall
1100
1000
900
800
700
600
500
400
300
1935 1940 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010
Year


PRACTICE
WHO DOES IT? ♀/♂
BENEFITS AND WHO BENEFITS ♀/♂
PERFORMANCE √/OK/X
LOW RF
MED RF
HIGH RF
INVESTMENT H/M/L
TIME TO START OF BENEFITS (MONTHS)
RISKS/ DISADVANTAGES

Farmers compare and decide which options to try



Some initial results

- In Ghana 97% of farmers had made changes in either their crops, livestock or livelihood enterprises
- In Rwanda 97% of female farmers stated that they felt better able to cope with ‘bad seasons’ following the training
- In Balaka, Malawi, 88% of trainees had shared the PICSA training with their fellow farmers
- Continuing to learn and adapt approach

Impact

- Through qualitative work farmers are able to describe impacts such as:
  - Paying for children's school fees
  - Enough food for the family all year
  - Animals are healthy
  - Increased income
  - Able to look after myself and not rely on others
  - Invest profits in agriculture, livestock and livelihood
  - Able to store food to cover for the next season
  - Improved social status in household and community
  - My family is happier

Walker INSTITUTE

Thank you

Graham Clarkson
g.clarkson@reading.ac.uk

University of Reading


WeFarm

500 million smallholder farmers worldwide

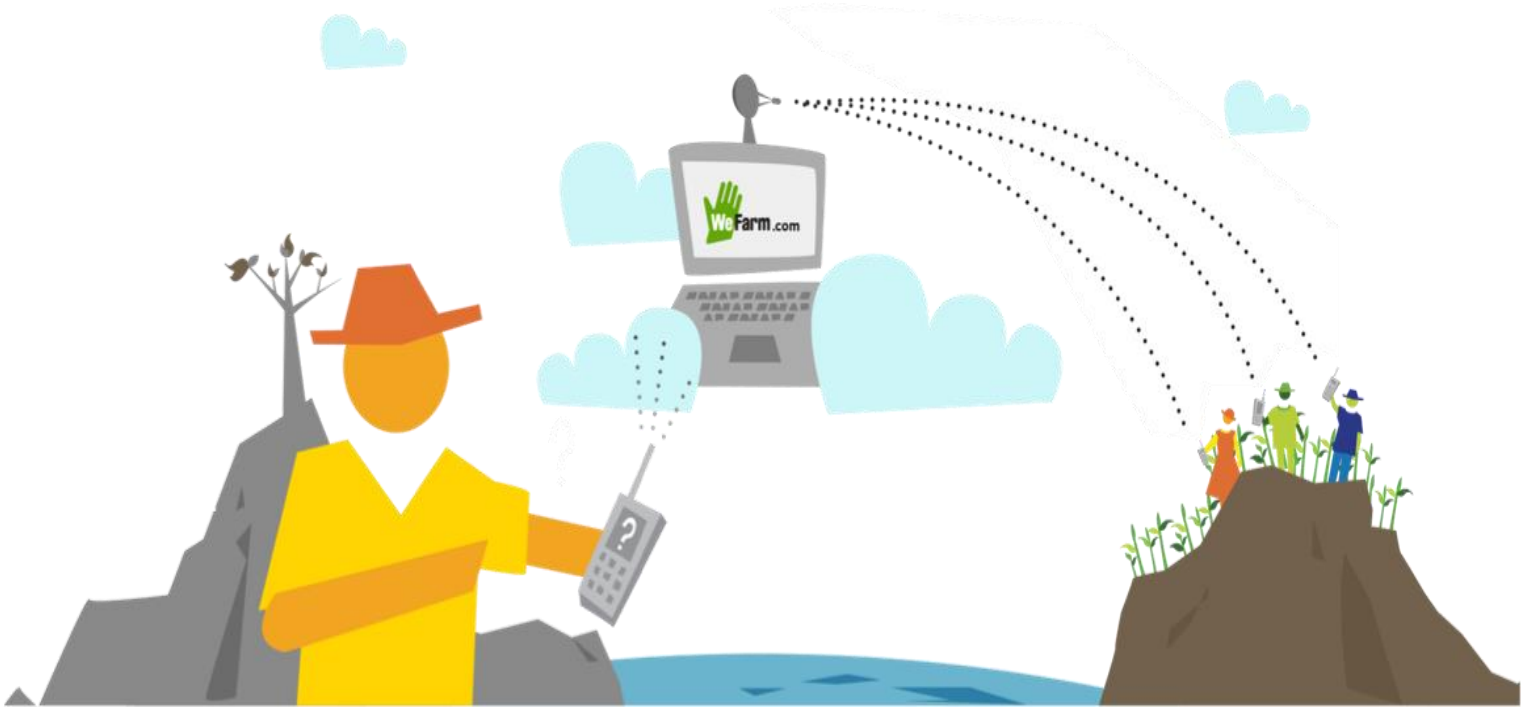
Remote, isolated & highly susceptible

to the effects of climate change

2 problems

Reach & Communication

Until WeFarm…

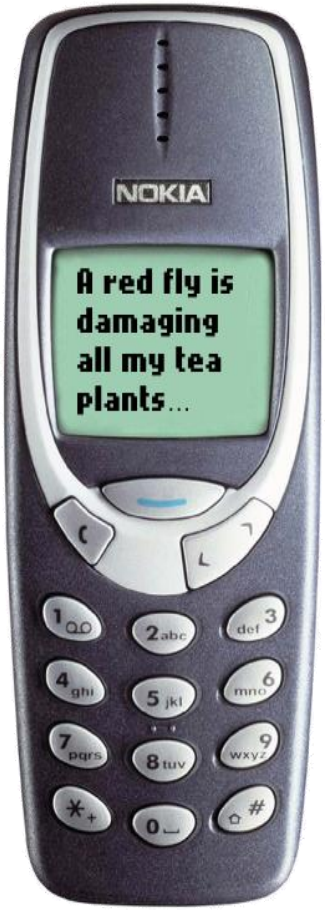


Using SMS to harness the **power of the crowd**


This is Victor
His tea farm is being attacked by a pest he’s never seen before

He sends a
SMS free
to the WeFarm number …

WeFarm's smart, crowd-sourcing technology gets his question to other WeFarm users that can help



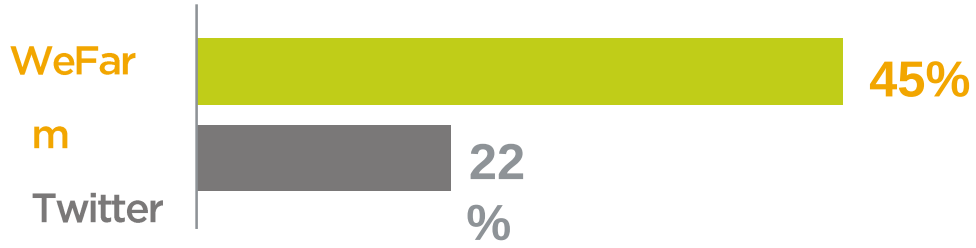
This is Doris

A tea farmer in Uganda who receives the question
She's dealt with this pest for 20 years.
Who better to share useful advice?

105,000 users

15 million interactions since 2015

Monthly Active Users



Questions Answered

90 Day Retention

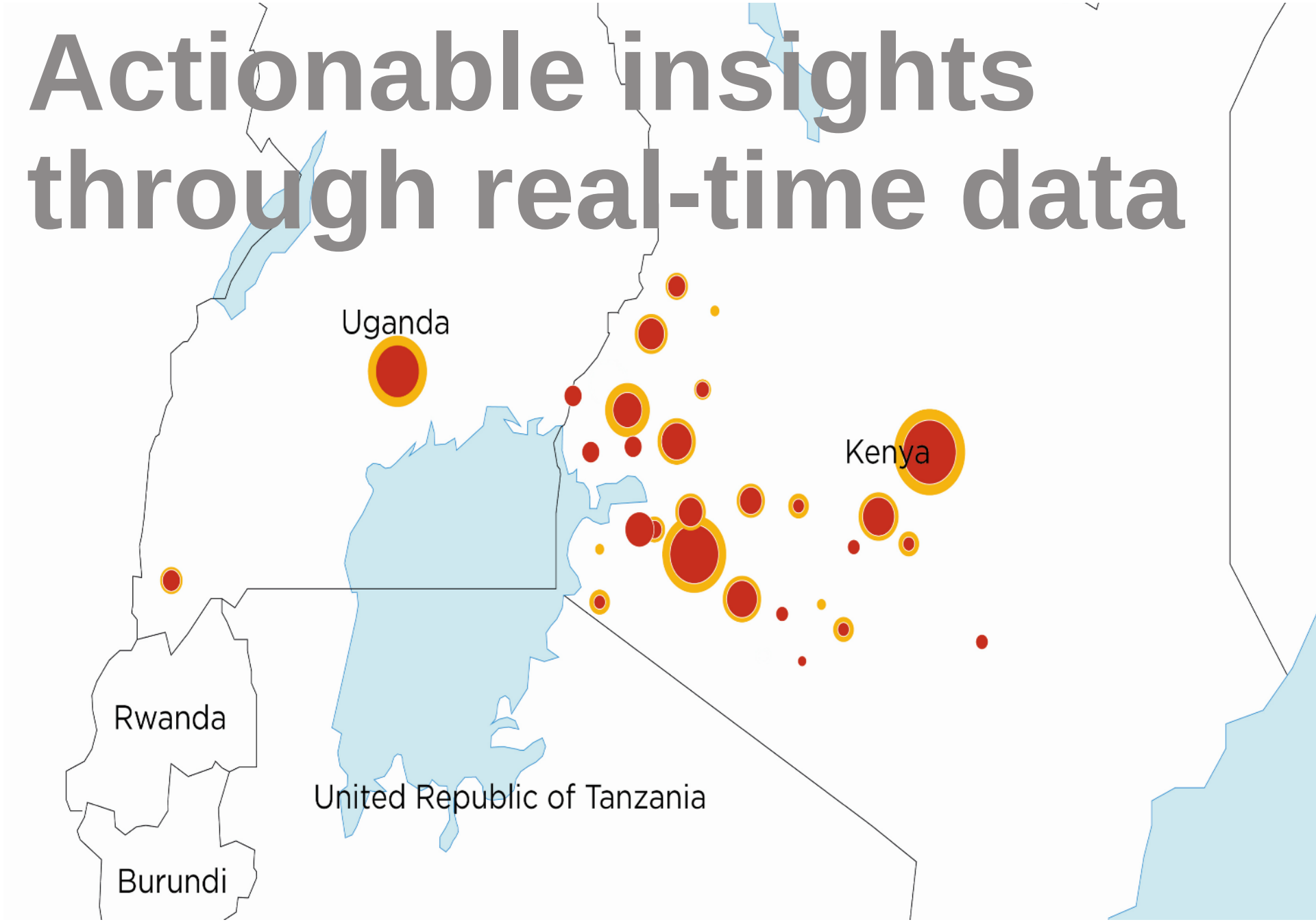
Resilience through grassroots innovations
El Niño Case Study

"Terrace their land so as to guide their soil against soil erosion." John

"Construct boreholes to harvest excess water which we can use during dry season" Michael

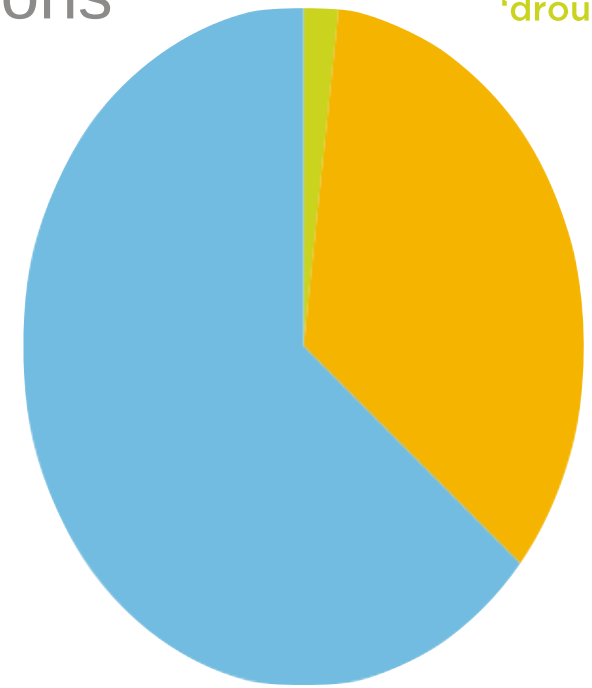
"Plant short term crops e.g beans, peas that do well in heavy rains" Rosemary

Actionable insights through real-time data



What are farmers already talking about

Famers as information providers: over 90% of our weather related questions are proactive



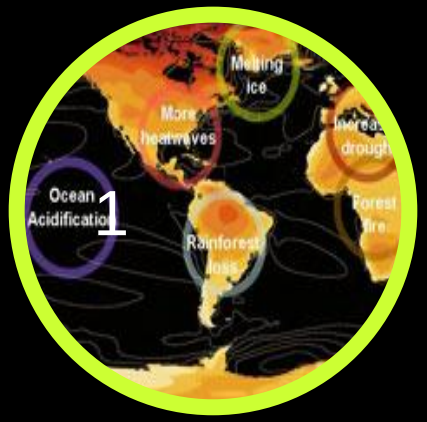
2%
Storm ('wet', 'flood', 'rain', 'dry', 'drought')

64%
Water ('hail', 'hailstorm', 'wind', 'windstorm', 'storm', 'gust')

34%
Temperature ('temperatur e', 'hot', 'heat', 'cold', 'frost')

Climate services and climate information for adaptation





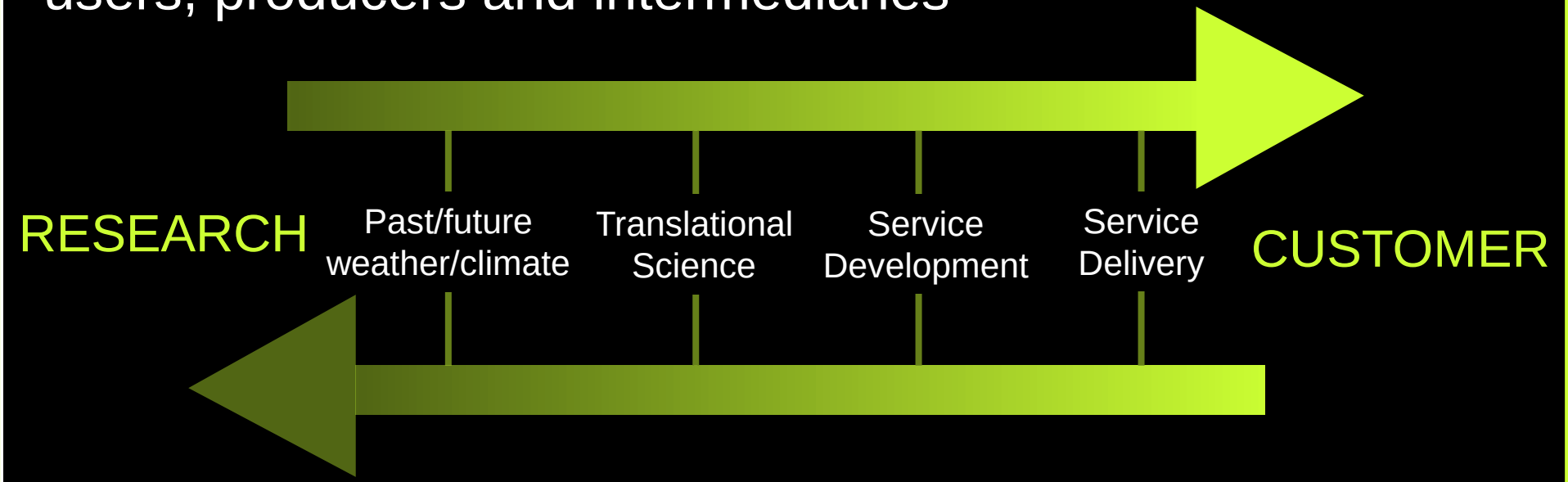
Dr. Richard Jones

Science Fellow, Climate Information: Met Office Hadley Centre

Visiting Professor, School of Geography and Environment, University of Oxford

Development and delivery, what have we learnt?

From Science to Service: A continuous dialogue between users, producers and intermediaries



This needs to happen at the scale relevant to the user
– spatially from local to national to regional
– temporally from daily to seasonal to multi-decadal

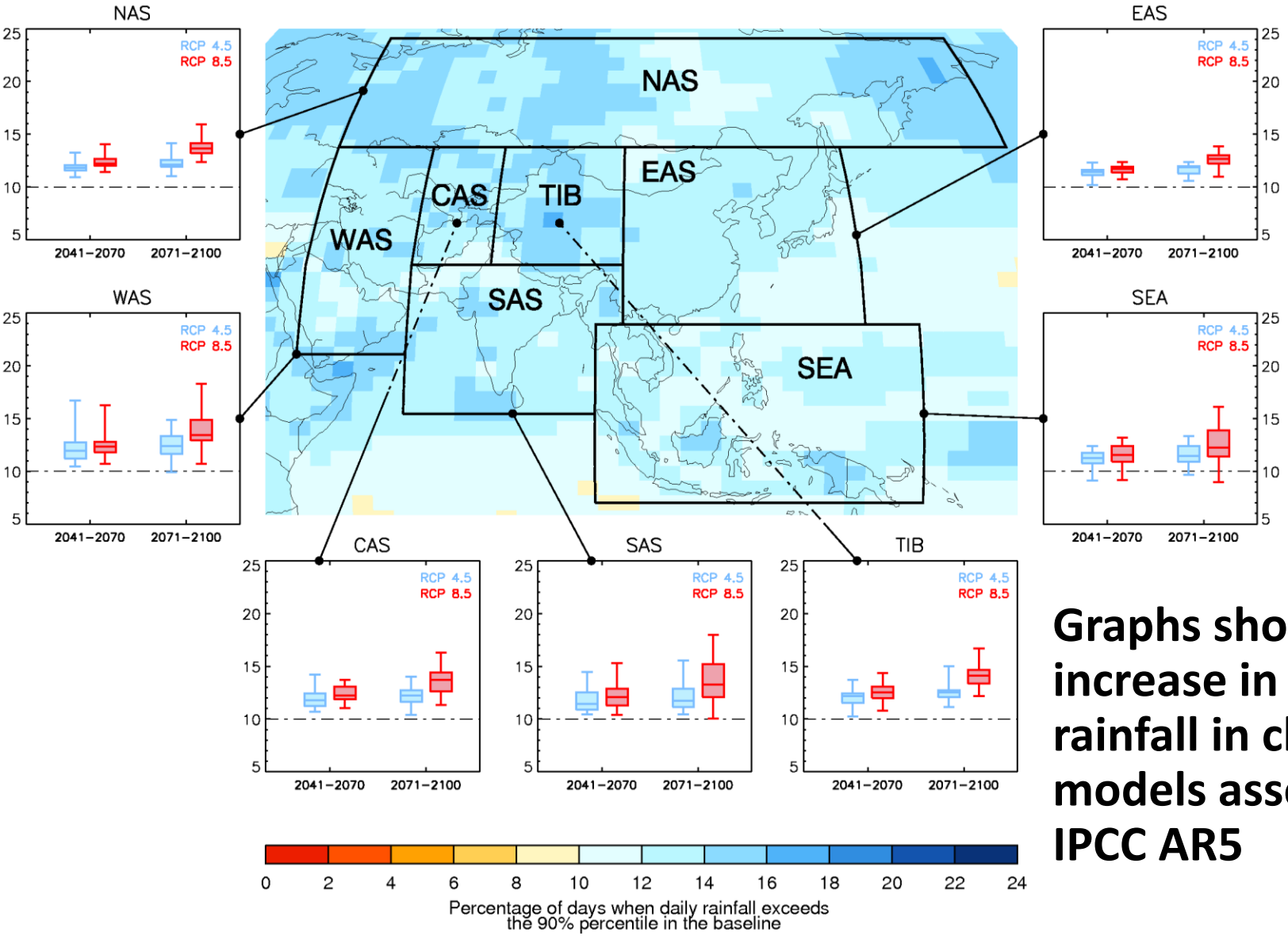
Building climate resilience in the Pyanj River Basin, Tajikistan – climate related disasters include heavy rain induced mudlfows and floods

Community-level vulnerability

Unstable hill-sides prone to mudflows and landslides

Land suitable for cultivation prone to flooding

Predictions of increases in heavy rainfall used to justify adaptation funding in Tajikistan



Graphs show range of increase in heavy rainfall in climate models assessed in IPCC AR5

Lusaka-FRACTAL dialogue to define city “burning issues”

Theme champions propose 8 city problem topics for discussion e.g. Greening Lusaka; Urban flooding; Institutions and practice

Participants from Lusaka and FRACTAL split into 4 groups for two sets of 1 hour discussions to unpack the proposed burning issue

Summary of relevant aspects of city issues: physical/institutional attributes; impacts; relevance of climate; entry points for action etc.