

An International Drought Mitigation Research Center - Update

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International Drought Mitigation Research Center: Recap

- Strong focus on *creating and researching drought management systems relevant* for industry, government, agriculture, water resources, *insurance*, engineering systems, climate science and applications, whole value chain approaches in agriculture, drought policy, communities – and their management systems.
- *Capturing and synthesising major project and program initiatives underway in regions and countries* to the benefit of international drought management needs – its more than facilitation Integral component of IDMP–“a key research component for IDMP”
- Strong links and support to GFCS (“GFCS provides a worldwide mechanism *for coordinated actions* to enhance the quality, quantity and application of climate services”).
- Ideally, strong links to FAO, UNDP, UN Environment, UNCCD, UNISDR and key global initiatives: NIDIS, IDMP in Eastern and Central Europe, USDMC,
- its actually doing the research.....



Rationale – Core issues



World Meteorological Organization
Weather • Climate • Water

- Drought mitigation research and development issues are extremely complex and not necessarily capable of being tackled by single institutes or even countries in isolation.
- ‘We cannot do this work alone’ – we need to learn from each other.
- Significant gaps in research, policy and practice remain, particularly regarding the merits of risk management compared with traditional crisis management approaches (IDMP, 2017).
- As a component of IDMP, the creation of an International Drought Mitigation Research Centre that will initiate global research initiatives, including building upon key existing regional initiatives, that are already providing valuable developments.



High value in a collaborative research framework that has a focus on management systems.

- Improving seasonal climate forecasts
- Improving the ability of forecasts to predict multi year/decadal droughts-S2S
- Climate change adaptation for agricultural industries
- Producing enhanced “named-peril” crop insurance systems /similar index-based systems
- Improved crop yield and production forecasts
- Developing products for use in drought monitoring: drought indices
- Developing and customising decision support tools
- Revamping Managing for Climate user engagement Workshops
- Crop production modelling under climate change and regional adaptation
- Assessing the economic value of improved climate risk management strategies through the application of seasonal climate forecasts for key agricultural industries

QDMC



- sub-seasonal to seasonal climate variability and their impact on US drought.
- Assess and utilise decadal prediction systems
- Evaluating/developing dynamical climate models: includes hybrid statistical-dynamical type techniques
- Assess ‘flash droughts’ – short term development of severe droughts.
- Linking land surface initial conditions with modelling to provide an important source for skilful drought forecasts
- interdisciplinary research and applications: - to ensure federal research is as coordinated and integrated into decision-making as practicable, inspiring interaction between the research community and beneficiaries.

NIDIS/USDMC

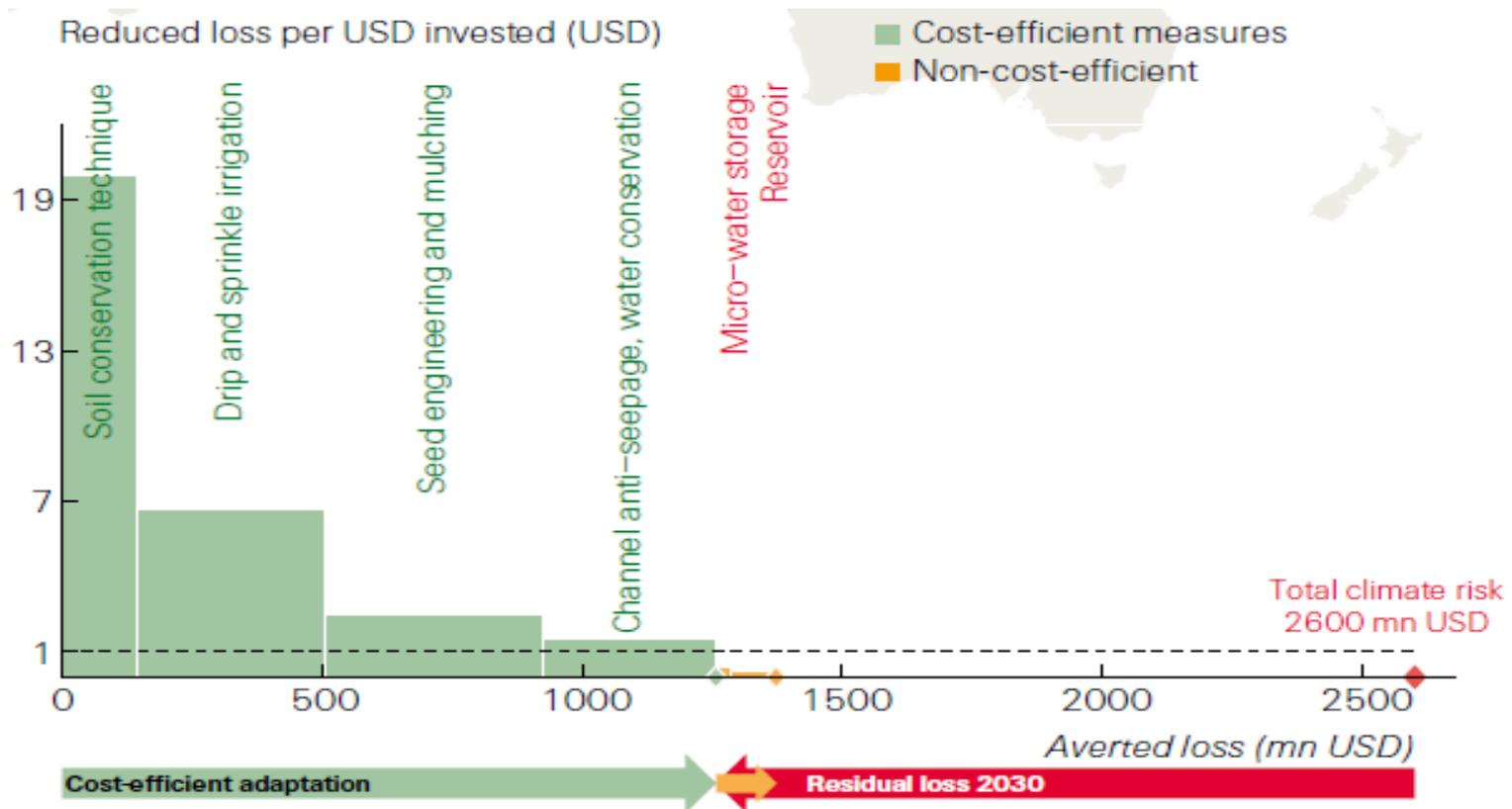


“Applying seasonal climate forecasting and innovative insurance solutions to climate risk management in the agriculture sector in SE Asia” – expected outcomes – (‘IKI’ German Government).

- Enhanced targeting of seasonal climate forecasts to management needs. Smallholder farmers and businesses engaged with the agricultural value chain are better shielded from physical and financial disaster associated with climate change if seasonal climate and agricultural.
- **Better quantification of risks, together with improved risk management strategies of smallholder growers, will allow re/insurance companies to develop better targeted and affordable insurance products.**
- Financial risks to smallholder farmers and agribusiness are alleviated if targeted/affordable risk transfer mechanisms, through (for example) innovative index-based insurance programs, and are easily accessible/fully supported by national and regional adaptation and risk management plans.



Risk Management and Risk Transfer



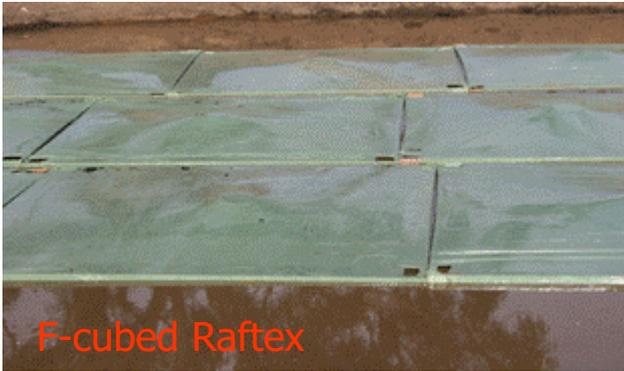
A portfolio of climate adaptation measures is required to address the total climate risk (Mushtaq, 2018).



Netpro
shadecloth



Rio-Tinto
Aquacaps



F-cubed Raftex



ECS E-VapCap

Physical covers for the protection of agricultural water



Drought insurance tool example

1. Enter strike and limits

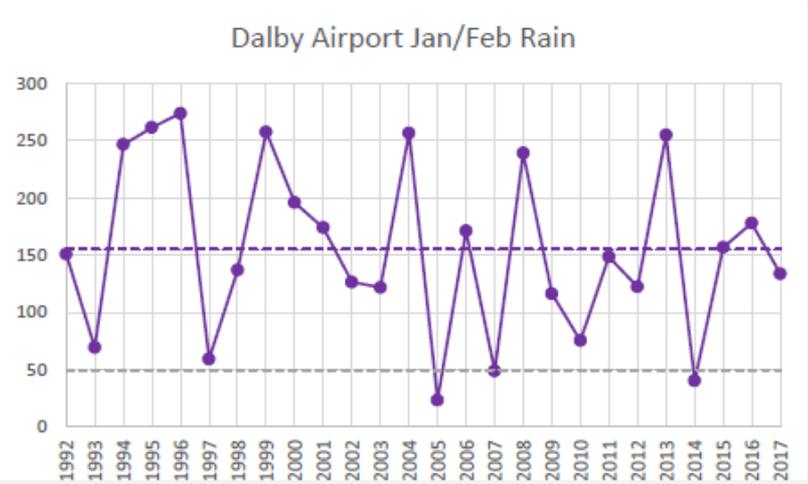
Inputs	
Attachment Strike	50
Limit Strike	0
Tick Value (AUD)	1,000



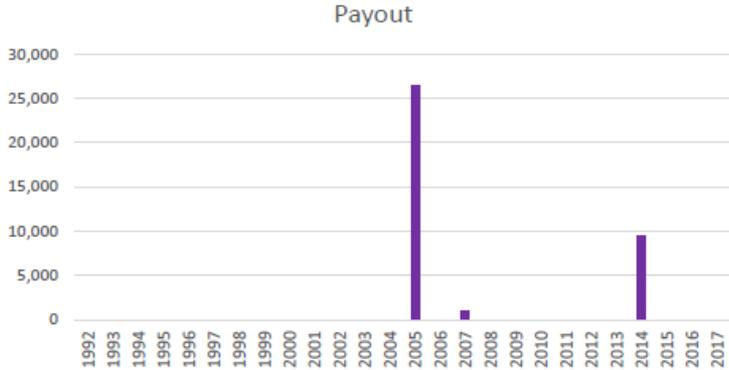
•Image from: <https://www.linkedin.com/pulse/collaborating-improve-drought-tolerance-crops-amarjit-s-basra>

Crop losses from low seasonal rainfall

→ 2. Assess when low seasonal rainfall occurs



↓
3. Calculate payouts for when low seasonal rainfall occurs



Making the possible practical



ASKBILL

DSS development: Enhanced sheep wellbeing and productivity – decision support -
University of New England



Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Programme





Next steps:

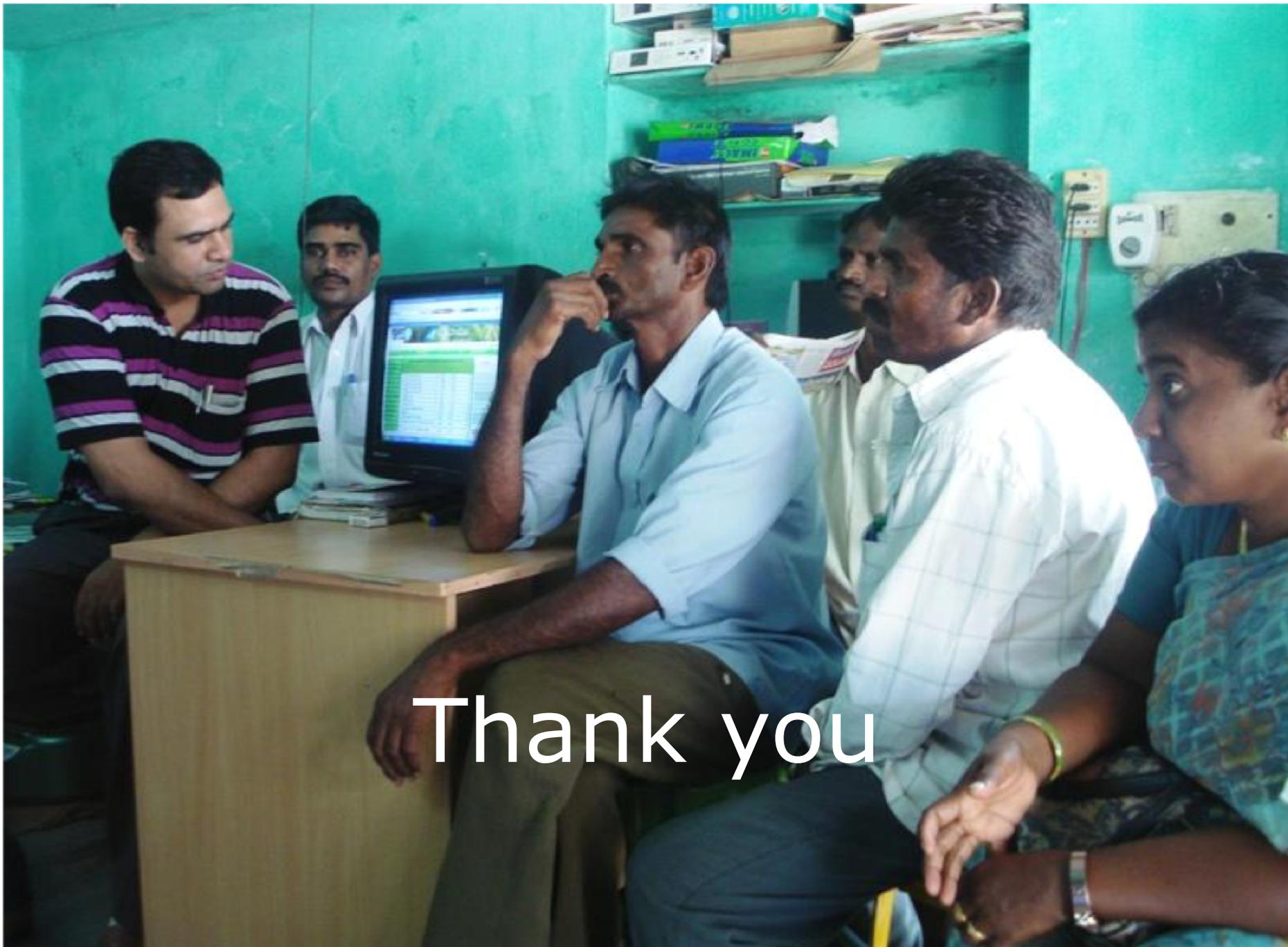
Increasing exposure and profile.

Aspen workshop, September 9-14, 2018: Aspen Global Change Institute – further engagement with key players (eg NOAA, NDIS, USDMC, GWP.....).

Inclusion of European initiatives (eg DMCSEE/Slovenia?).

Setting up key nodes: eg Toowoomba/Armidale (Australia) (USQ/UNE); Boulder/Lincoln (NIDIS/NDMC); Slovenia?; Others - IWMI? Nairobi?...

Funding plans....Green Climate Fund?, IKI?



Thank you

Logistics-in-Brief

Contact Alyson Wright with any questions: awright@agci.org | 603-493-2199

To book flights: contact Paula Hudson paula@ski.com | 1-800-525-2052 ext. 3029



Meeting Location: The meeting will take place at the Annabelle Inn at 232 W Main St. in Aspen.

Internet Access: The hotel and meeting space have high-speed wi-fi available.

AGCI has a Mac laptop to run all presentations. Please have your presentation prepared to transfer in

advance of your presentation.

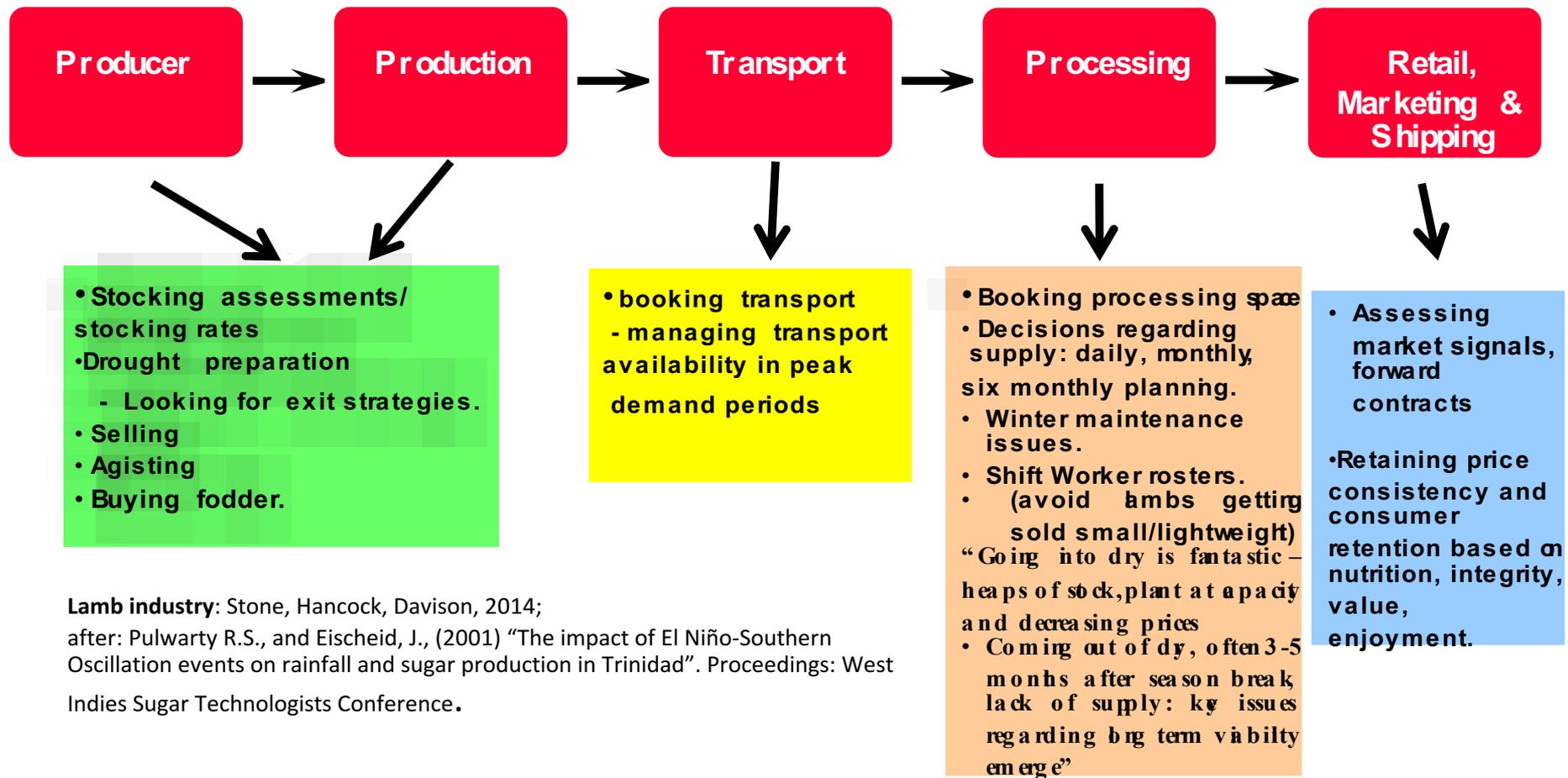
Dress & Weather: Please dress in layers to accommodate temperature variations throughout the day (during the day it could be warm or chilly (up to 68 deg F/20 deg C) and chilly at night (as low as 32 deg F/0 deg C). Dress for the meeting and dinners is casual. Rain gear is advised for afternoon showers.

Altitude: Aspen is at an elevation of 7,908 ft (2,410 m) above sea level. It is important to drink more water than normal before arriving and throughout your stay to prevent altitude sickness. Be aware alcohol might affect you faster. Please consult a physician before coming to Aspen if you have any altitude related health problems.



Climate/drought information/forecasting research has no value unless it changes a management decision ...

(interdisciplinary research example: agricultural supply chain)



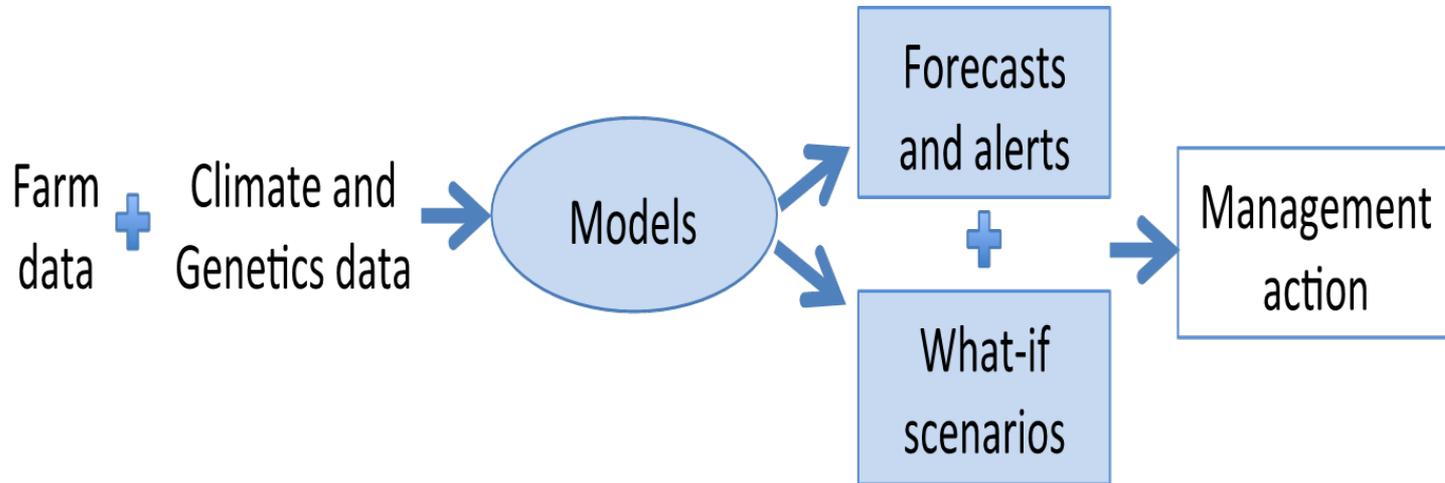
Lamb industry: Stone, Hancock, Davison, 2014;
after: Pulwarty R.S., and Eischeid, J., (2001) “The impact of El Niño-Southern Oscillation events on rainfall and sugar production in Trinidad”. Proceedings: West Indies Sugar Technologists Conference.

ASKBILL to help manage seasonal variation incl drought

Provides forecasts of up to 180 days:

- Achieve pasture targets
- Forward plan stocking rates
- Achieve weight, condition score & carcass targets for livestock
- Avoid problems from worms and flystrike
- Early warning of extreme weather events

ASKBILL to help manage seasonal variation



On-farm data + seasonal forecasts supplied to a web-based platform that identifies risk and sends alerts to inform management of sheep production systems

