

Looking into the future
of food production
in a changing climate
(without a crystal ball)

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**Looking into the future of agriculture
in a changing climate**

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**Re-thinking water policy priorities in the Mediterranean
region in view of climate change**

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Reasons for concern

	Possible effect	Confidence level
Optimal location of crops (zones)	change	high
Crop productivity	change	high
Irrigation requirements	increase	high
Soil salinity and erosion	increase	medium
Damage by extremes	increase	medium
Environmental degradation	increase	medium
Pests and diseases	increase	medium

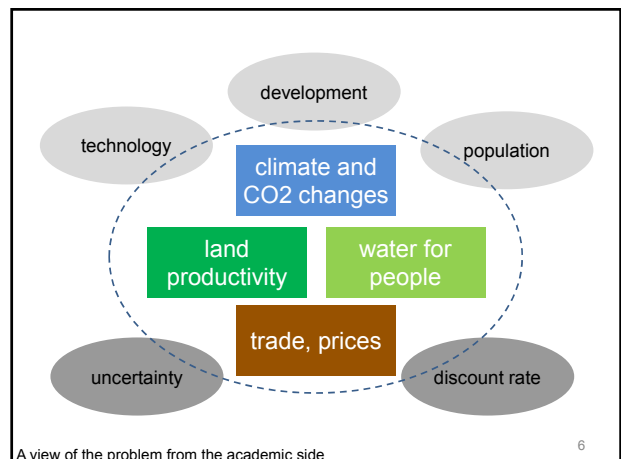
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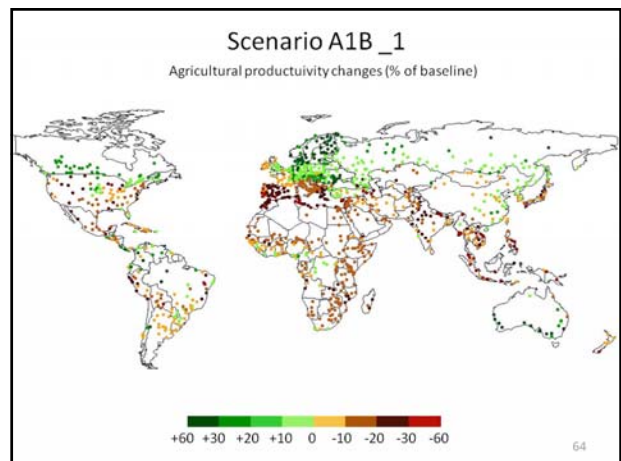
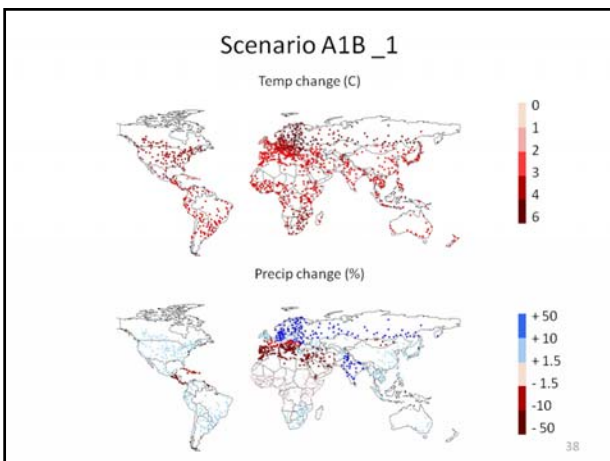
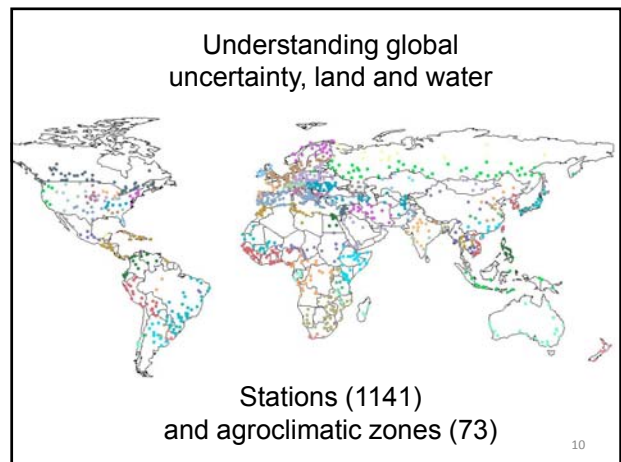
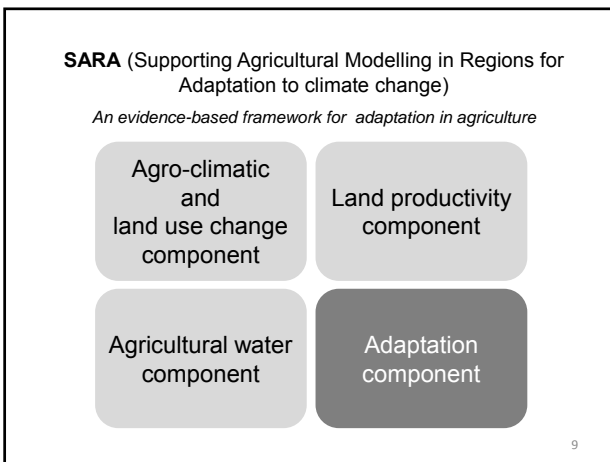
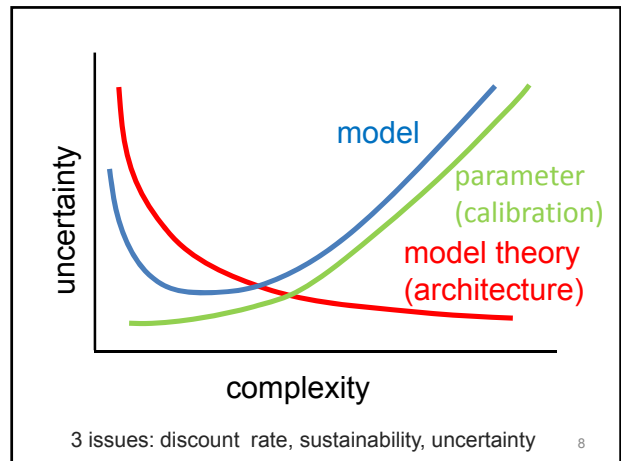
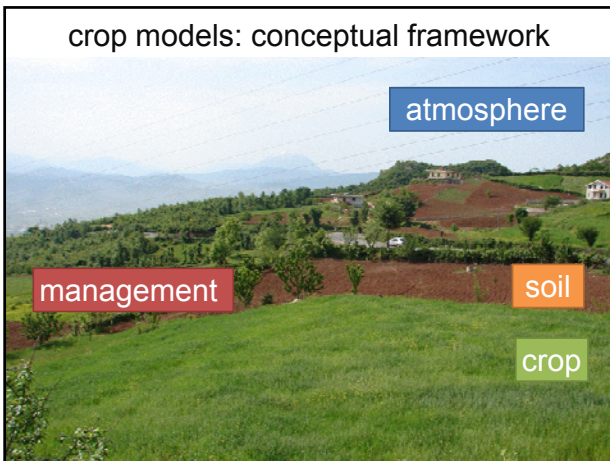
**Questions
about the future**

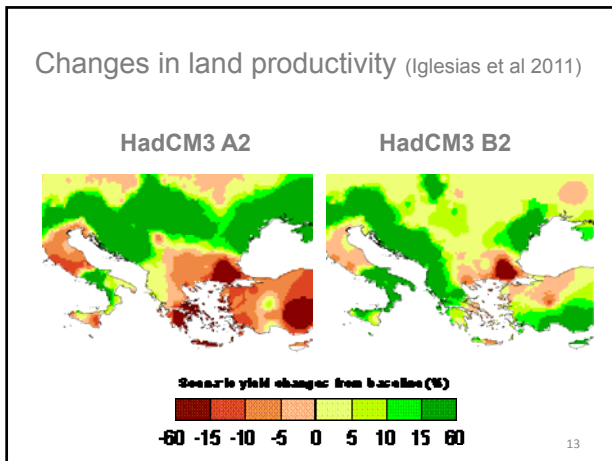
How will farmers deal with an uncertain future?

How will vulnerability, and disparities determine this response?

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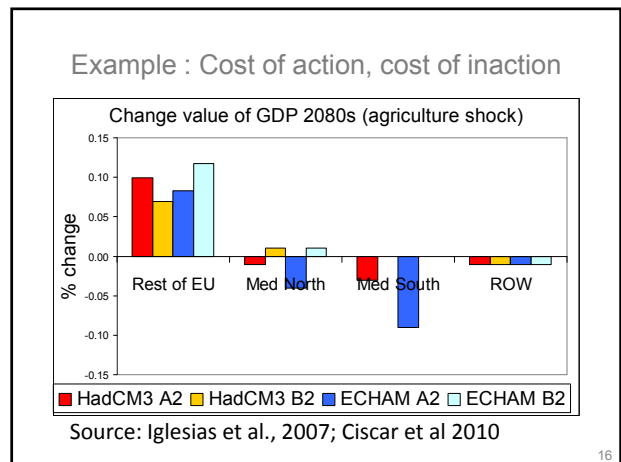




Complexity: need to understand local vulnerabilities

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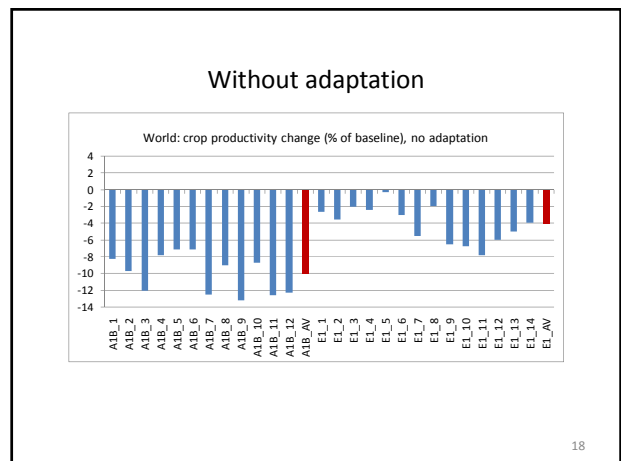
Managing the unavoidable (adaptation)



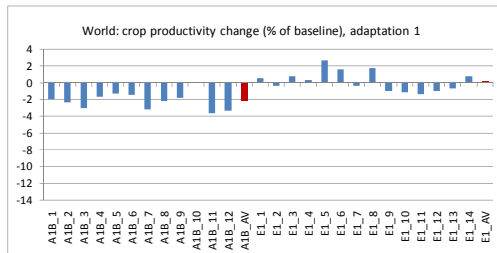
Adaptation options

Adaptation policy	Irrigation water assumptions	Fertiliser input assumptions	Environmental implications
Adaptation 1	Demand satisfaction according to assumptions on technological capacity of the country	No optimisation of fertiliser input	Optimisation of environmental water requirements
Adaptation 2	No room for changes in irrigation	Optimised	Potential increase of diffuse pollution
Adaptation 3	Demand satisfaction according to assumptions on technological capacity of the country	Optimised	Optimisation of environmental water requirements Potential increase of diffuse pollution

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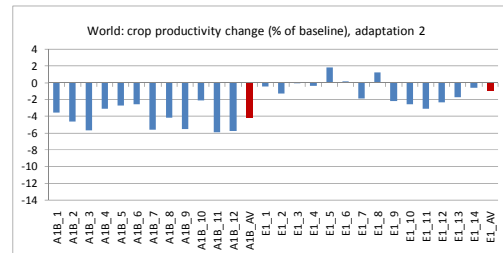


Adaptation 1



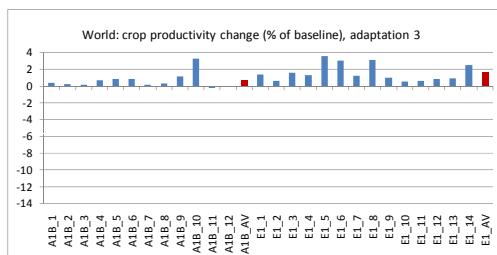
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Adaptation 2



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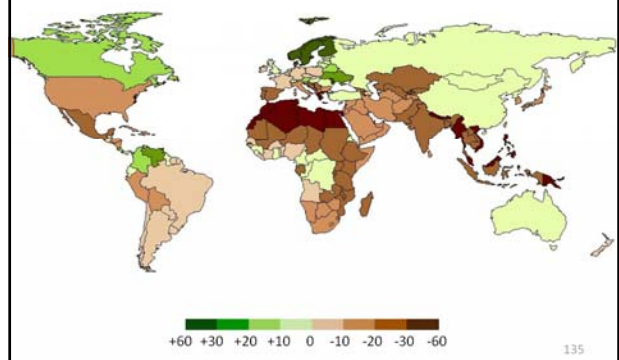
Adaptation 3



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High emission av No adaptation

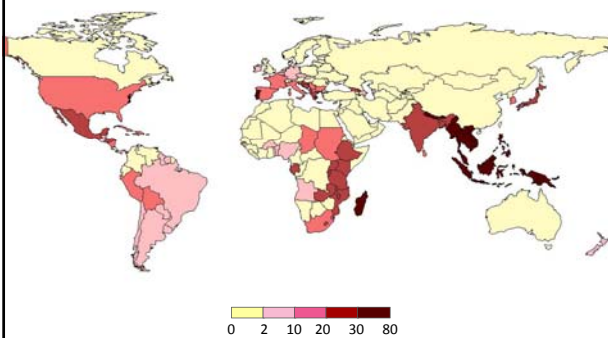
Agricultural productivity changes (% of baseline)



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High emission av Adaptation 1&3

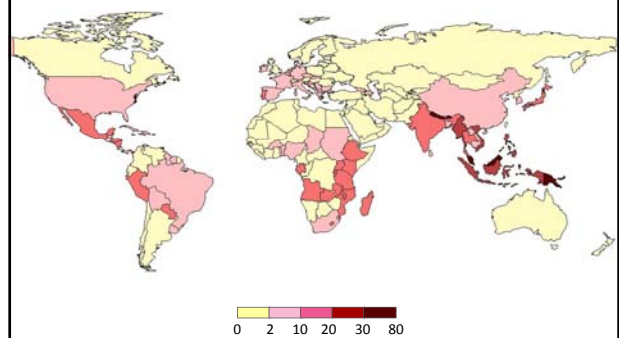
Irrigation water demand change (% of baseline)



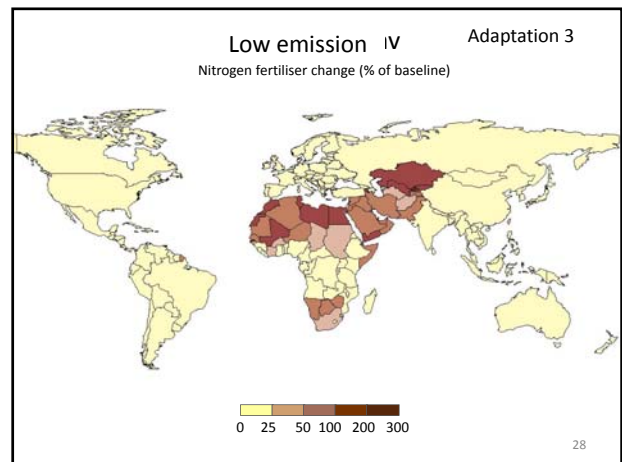
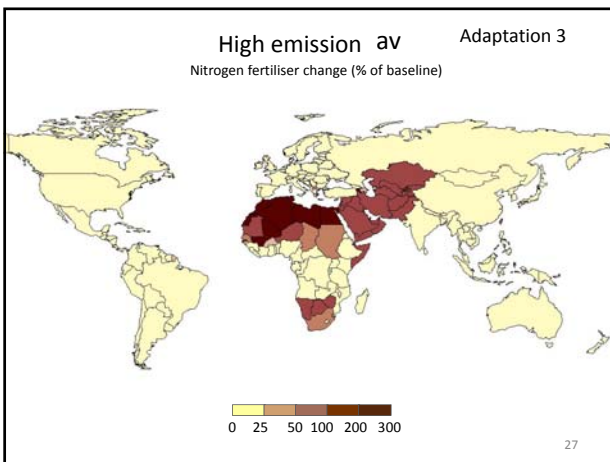
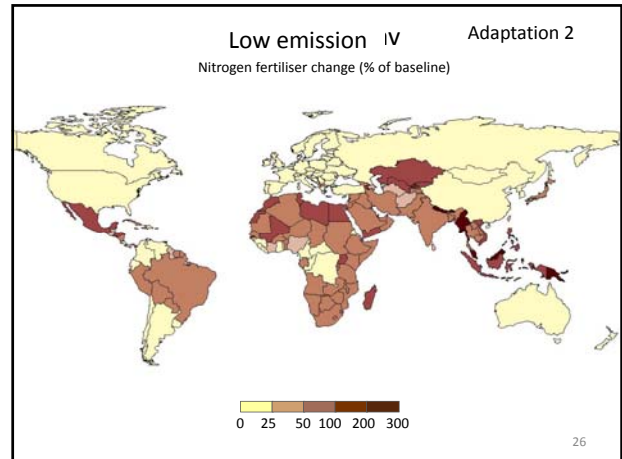
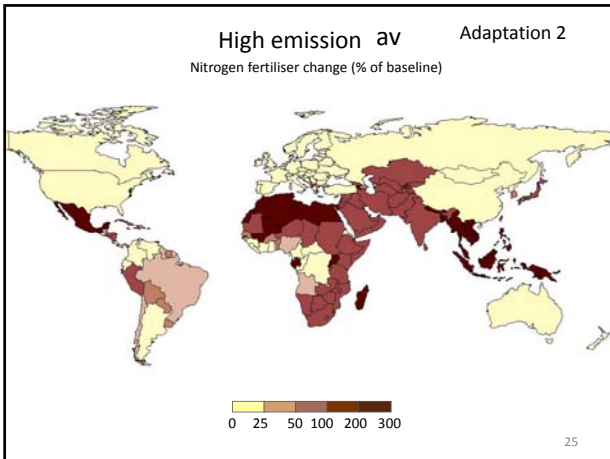
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Low emission IV Adaptation 1&3

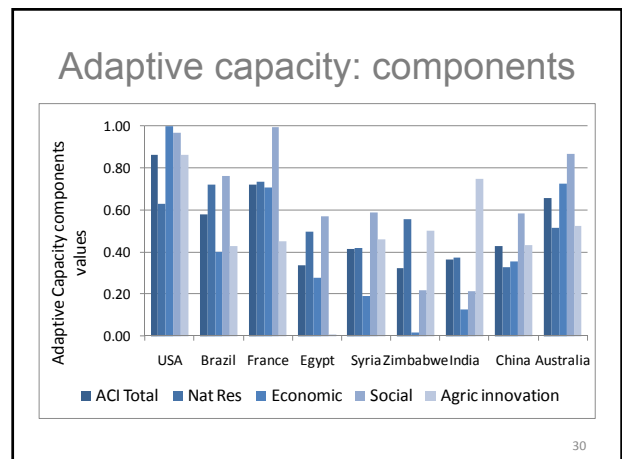
Irrigation water demand change (% of baseline)

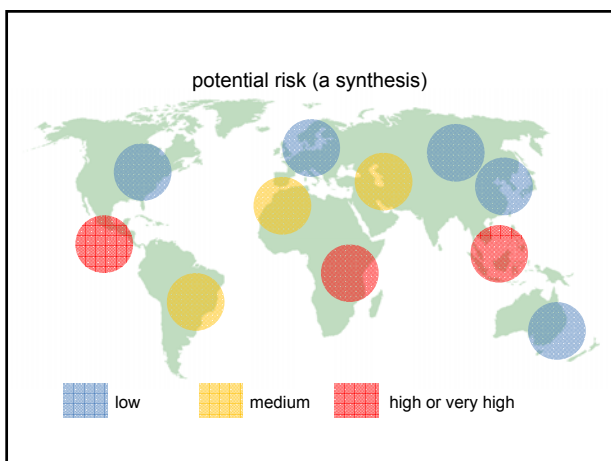
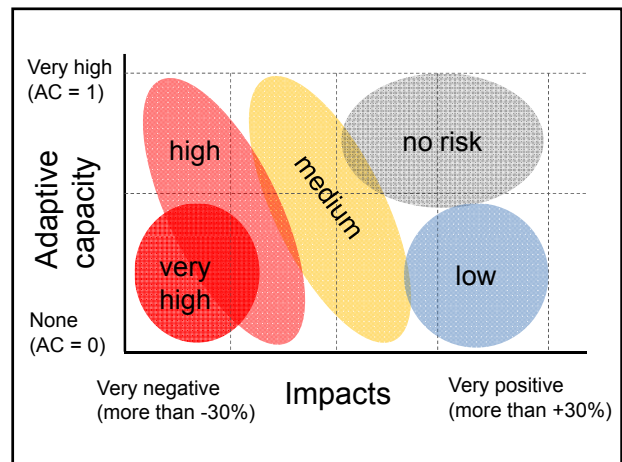
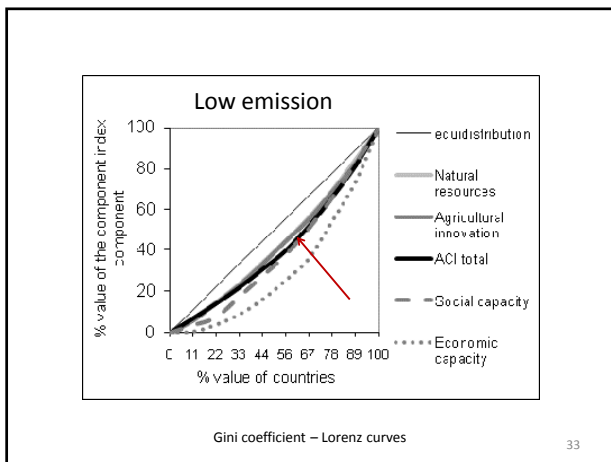
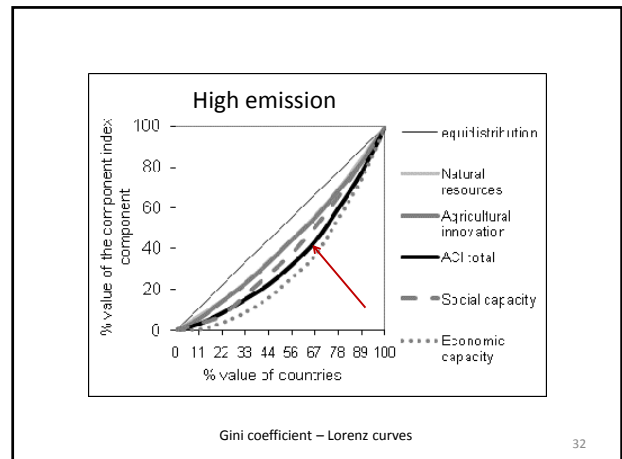
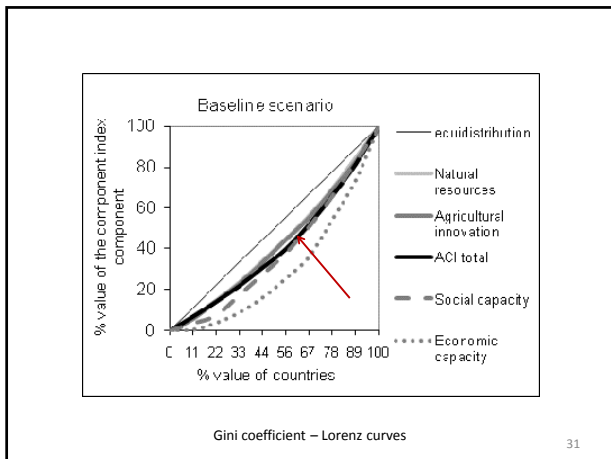


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- **Green Climate fund:** Operating entity of the financial mechanism, "to support projects, programmes, policies and other activities in developing countries related to mitigation"
- **From my expertise** in terms of the sectoral impacts and the cost of adaptation policies ... the question is if the Green Climate Fund will be effective to support undertaking the kind of adaptation policies necessary worldwide?
- Adaptation and mitigation efforts do not occur in isolation, they need to be **mainstreamed** into development policies





1 key issue can climate change science provide insights about the future of food production?

3 assertions

- Understanding uncertainty is useful for facing agricultural challenges
- Understanding and reducing vulnerability does not demand accurate predictions of the impacts of climate change
- It is politically difficult to justify vulnerability reduction on economic grounds

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