IW2017 | WORKSHOP REPORT

IMPACTS WORLD 2017

S9: The role of mitigation and adaptation in securing SDGs under climate change

Host: **Lorenza Campagnolo** *(Fondazione Eni Enrico Mattei (FEEM), Italy)*

Rapporteur: Shouro Dasgupta *(FEEM, Italy)*

Summary of themes covered in workshop

- Impact of climate change on agriculture and the resultant effects on indicators of extreme poverty and undernourishment prevalence

- Implications of considering income and impact distribution in designing optimal mitigation scenario

---

Most controversial question that came up in this workshop?

- Is it reasonable to continue analysing non-CO2 fertilisation scenarios? Are projections on yield change with CO2 fertilisation reliable?

- Assumptions on future evolution of poverty, inequality and undernutrition prevalence in the reference scenario have a huge impact on assessing climate change impacts and also on designing the optimal mitigation scenario.

Results of the discussion

- Without CO2 fertilisation, agricultural output drops under both RCP 8.5 and RCP 2.6. In 2050, Climate change impacts in agriculture will result in an additional 300,000 - 500,000 people going below the poverty line (2% - 4% rise in poverty prevalence) and 1 million additional undernourished people. Asia is the most vulnerable region.

- These figures are low compared to other assessments because the SSP5 reference scenario considers high economic growth and fast convergence towards SDGs.

- In designing optimal climate policy, within-country income distribution and differentiated damage functions (proportional, neutral and inversely proportional to income) should not be disregarded. When climate change damage is inversely proportional to income, i.e. poor people suffer more impacts, the optimal mitigation effort is higher that in the reference case and equivalent to the case of low discount rate and inequality aversion in consumption.

Research gaps identified

- Interplay between adaptation and mitigation is critical and should be studied in detail.

Next steps

- Adaptation measures should be incorporated in CGE models.

Other

- Policy recommendation: Ensuring that the shift towards renewable energy does not affect the bottom at the income distribution.

3-5 keywords that characterize the session

Poverty; inequality, agricultural impact; undernourishment; climate action