Session 3 LCS National Pathways and the Research environment

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Seven presenters discussed roles of research on visions and scenarios to achieve sustainable low-carbon societies. Antonio Navarra explained that although local impact studies need high resolution data from climate change models, the high cost and low accuracy of high resolution data makes researchers hesitate to deliver data. Giulio Boccaletti pointed out that data (even insufficient) is essential for policy-makers to make more meaningful decision, and research can develop data and good at program analysis, but often not good for solution analysis. Manfred Fischedick showed German CO_2 80% reduction scenarios by 2050 and pointed out that it is worthwhile for policy makers to present set of different scenarios to mark the decision range because scenarios are quite different from predictions. He pointed out that a good definition of LCS is necessary; how low and relationship with other sustainability criteria. Kenrick R. Leslie introduced Caribbean Region research activities and explained that south-south networking is important to enhance the voice of climate-vulnerable countries because even a 1 degree temperature rise (350ppm-CO_2eq) causes serious climate impact on coral reef bleaching, decreasing of fish stock, etc. Mikiko Kainuma and Junichi Fujino introduced their experiences how to develop 70% CO_2 emissions reduction scenarios by 2050 in Japan and proposed dozen actions to achieve low-carbon societies. He also introduced examples of a dozen actions in the city of Bologna. Shuwei Zhang explained Chinese 2050 low-carbon development scenarios and stressed the role of technologies. P.R. Shukla introduced Indian 2050 sustainable low-carbon society scenarios and pointed out that sustainable development pathways align with low-carbon society. Local requirements (such as water, air, soil, etc.) can be solved in consideration with longer-term sustainable low-carbon development.

Major findings

- **Cooperation between researchers and policy makers:** Close collaboration amongst policy makers and researchers must be strengthened. Research can develop data and program analysis for policy makers which is essential for policy-makers in their decision-/policy- making, e.g. to set bold and practical target setting.

  Challenge for researchers: On the other, researchers are not good for solution analysis. Researchers need more effort to deliver their scientific findings in plain manner and science interpreters have role to bridge between researchers and stakeholders. Although, local impact study requires high resolution data by climate change model, high cost and low accuracy of high resolution data makes researchers hesitate to deliver data.

- Technology R&D is key to realize low-carbon society. Solutions are available to achieve low-carbon society and sustainable (happy) life. We need good definition of LCS; how low and relationship with other sustainability criteria.

- Adaptation and the mitigation are not separate issues and concerted study and policy-making would be required. Adaptation actions will be needed, but costs and risks shall be much lower.

- Even 1 degree temperature raise (350ppm-CO_2eq) does cause serious climate impact on coral reef bleaching, decreasing of fish stock, etc. Sustainable development pathways align with low-carbon society. Local requirements (such as water, air, soil, etc) can be solved in consideration with longer-term sustainable low-carbon development.

- Low-carbon society scenarios have been developed not only in developed countries (such as UK, Germany, France, Canada, Japan, etc.) but also in developing countries (such as China, India, etc.). Policy makers are encouraged to present sets of different scenarios to mark the decision range. Scenarios are quite different from predictions. There are various methods; back-casting methodology enables setting visions and pathways towards low-carbon society.

- South-south networking is important to enhance the voice of climate-vulnerable countries.

Main issues discussed

1. How to develop accurate data that societies requires and deliver it to policy making process
    - ○ How meaningful are high resolution climate data – do users request more detailed data than are scientifically justified,
    - ○ Communication of analysis in ways that is meaningful to policymakers.
2. How to acquire necessary research fund to develop basic database for LCS research
    - ○ Resources needs for low carbon society R&D,
    - ○ How to ensure advanced low-carbon technology research and development to achieve drastic GHG reductions.
3. How to align local requirements and middle/long-term national/global scale problem such as LCS
    - ○ How to deal with controversial countermeasures such as nuclear and CCS through narrative LCS scenario descriptions,
    - ○ Prospects for CCS in developing countries, including the Caribbean.
4. How to combine adaptation countermeasures and mitigation options in co-benefit and cooperative manner
    - ○ Beyond economic analysis. Co-benefits, mainstreaming, lock-in.
    - ○ The links between low carbon pathways and wider sustainability/environmental issues.
    - ○ The implications of water availability for energy generation as a result of climate change.
5. How to define Low-Carbon Society
    - ○ How to convince policy makers by showing narrative and qualitative LCS scenarios,
    - ○ The “resonance” of the low carbon society concept in different countries.
6. How to identify the role of behaviour change/lifestyle change to diffuse existing and advanced technologies
7. How to deliver solution analysis outputs in combination with problem analysis outputs
    - ○ When do we become “locked in” to different visions of the “low carbon society”? What are the infrastructure consequences?
8. Low carbon tourism and small island states
9. How is policy in China (5 Year plans) influenced by low carbon society analysis.
10. What are the long term implications of short-term climate -related policy actions in China?
11. “Low Carbon” is not an analogy of the Sustainable Development which is the concept covers LCS.

Items and ideas for further activities of LCS-RNet

- ○ Research on ‘Co-benefits’ and ‘Co-operation for LCS’
- ○ How to implement changes towards LCS?
- ○ A strategic framework for achieving development resilient to climate change
- ○ A research agenda should focus on data infrastructure and ways of organizing and communicating data and analysis in accessible ways to key decision makers.