

**Summary of the meeting with Professor Dr. Pavel KABAT, Professor Dr. Nebojsa NAKICENOVIC and Professor Chin-Min LEE**

**1. Personal Profile**

< Professor Dr. Pavel Kabat >

(1) Affiliation

Director General and Chief Executive Officer (CEO), International Institute for Applied Systems Analysis (IIASA)

(2) Major professional experiences (only selected ones)

Professor of Earth System Science at Wageningen University;  
Director and Chair of the Royal Dutch Academy of Arts and Sciences' Institute for Integrated Research on Wadden Sea Region

(3) Areas of expertise

Climate hydrology and water cycle; water resources and climate; land interactions with the atmosphere and biogeochemical feedbacks; climate system and climate change, and global change

< Professor Dr. Nebojsa Nakicenovic >

(1) Affiliation

Deputy Director General and Deputy CEO, IIASA

(2) Major professional experiences (only selected ones)

Professor of Energy Economics at the Vienna University of Technology;  
Director, Global Energy Perspectives, World Energy Council;  
Co-Chair, Scientific Steering Committee, Global Carbon Project

(3) Areas of expertise

Long-term patterns of technological change; economic development in response to climate change; evolution of energy, mobility, information and communication technologies

< Professor Chin-Min Lee >

(1) Affiliation

Special Advisor to the IIASA Director General and CEO

(2) Major professional experiences (only selected ones)

Thirty years in United Nations World Health Organization (WHO) capacities, including as the WHO Director-General's Special Representative to the United Nations (UN) and other International Organizations, and Director of WHO in Vienna

(3) Areas of expertise

Diplomatic science; organizational management; management development; international studies

## 2. Meeting Specifications

(1) Date

October 16, 2014

(2) NIES participants

Dr. Akimasa Sumi, President

Dr. Hideo Harasawa, Vice President

Mr. Hiroyasu Tokuda, Vice President

Dr. Shogo Murakami, Executive Research Coordinator; Manager, International Coordination Office

< Center for Global Environmental Research >

Dr. Hitoshi Mukai, Director

Dr. Nobuko Saigusa, Deputy Director

Dr. Seita Emori, Head, Climate Risk Assessment Section/Principal Investigator of the Climate Change Research Program

Dr. Yoshiki Yamagata, Principal Researcher; Head, International Project Office TSUKUBA, The Global Carbon Project (GCP Tsukuba International Office)

Dr. Sharifi Ayyoob, Associate Researcher; Executive Director, GCP Tsukuba International Office

< Center for Global Environmental Research >

Dr. Tsuyoshi Fujita, Director

Dr. Mikiko Kainuma, Fellow

Dr. Toshihiko Masui, Head, Integrated Assessment Modeling Section

Dr. Yasuko Kameyama, Head, Sustainable Social Systems Section

(3) Discussion procedure

President Sumi presented an overview of NIES followed by presentations and discussion on the following research activities relevant to the research fields of IASA:

- Global Climate Risk Research at NIES
- Global Carbon Project at NIES
- Climate Change Research Program (PJ3) Climate policy assessment and LCS scenario development
- Eco-city Systems Research Program

Subsequently, the advisors and President Sumi and NIES presenters conducted wide-ranging discussions on the basis of the presentation content.

### **3. Comments by Professor Dr. Kabat, Professor Dr. Nakicenovic and Professor Lee**

- (1) NIES should make its models, outcomes, recommendations and their merits easily-understandable to facilitate their application to policy and social frameworks

NIES are tasked with being guardians of social and policy formation. While research on, for example, carbon management, one of the main tasks of the Center for Global Environmental Research (CGER), is producing good outcomes, ideally these should be directly applied to policy needs. The actual process of connecting models and outcomes to social frameworks is also extremely difficult as social and human behavior is constantly evolving, but this is an issue which needs to be addressed as a matter of priority.

Currently complexity in the models is extremely high, but there are nevertheless many further exogenous factors relating to social and human behavior. In the same manner, while excitement and progress on the academic side is one thing, the reality of the political state is another, and our community is not meeting policymakers halfway. When you speak to them you will quickly lose their attention if you cannot convey your successes and recommendations in a succinct and comprehensible manner.

In this context, we have reached the point where it is necessary either to disassemble the complexity or come back to harmonious development. Modeling should be carried out with the aim of policy integration and lobbying also needs to be integrated into the process. One simple step towards demonstrating and translating outcomes and their applications and merits is to have some concise and understandable success stories. The notion of success will subsequently generate its own momentum and further facilitate processes for the social and policy application of your research.

- (2) Global Carbon Project (GCP) at NIES was a pioneer in global carbon cycle studies and should continue to build on its contributions and address forthcoming challenges

The GCP was both pioneering and visionary and has contributed greatly to not only the understanding of the global carbon cycle but also the enhancement of modeling and the generation of data. While great progress has been made, and there are now more than 500 comprehensive atmospheric, oceanic and terrestrial monitoring platforms, such as ground-based stations, ships, aircraft and satellites, an ongoing challenge is the development of a global-scale integrated carbon observation and analysis system. Integration and long-term infrastructure are necessary to further long-term observations. The infrastructure for such a system is already in place in Europe and GCP should play a core role in integrating observation for the Asia-Pacific region.

Conversely, funding at the EU-level has for some time been transferred to national

responsibilities in the aftermath of the Kyoto Protocol. Thus by stimulating funding and investment to create a network for this region, Japan and the GCP now have the opportunity to contribute to our global community as a whole.

Activities on the carbon cycle and urbanization as well as carbon and waste are also extremely important and will have to continue in some form. You should emphasize and continue to update the GCP website as this is an example of one of the great successes of our community.

- (3) NIES and IIASA have a strong history of collaboration and this should be maintained and enhanced in particular areas

Collaborative activities between NIES and IIASA have been ongoing since our work together to develop scenarios at the Intergovernmental Panel on Climate Change. The work we have done together, in particular on carbon budgets, is extremely important. This work had huge visibility and a high public profile, was all over the media and resulted in a huge number of hits on the GCP site. This represents one of the great successes of our community and the GCP still has a lot to contribute.

While there are many players worldwide involved in the development of models, there are varying levels of success. However, both NIES and IIASA have a strong history of outcomes and are in the very top tier in these areas. As such, a strong enhancement of activities on the development of integrated assessment models is suggested, such that we can comprehensively address the associated developmental process.

- (4) NIES should be thinking about sustainability and next generation strategies for the future direction of research - including next generation modeling; the necessity to build new bridges between disciplines; provision of non-traditional solutions; and creating narratives.

We are living in an era when paradigms and contexts are constantly changing, which represents one of the greatest challenges for our community. Next generation models in general, not just climate models, are emerging out of sustainable development models. These will be required to elucidate the pathways to sustainable futures. This is a pressing task of our community, and in fact we are the only ones positioned to do this work. This will necessitate intensive collaboration in a number of areas, including co-benefits which reconcile climate with sustainable development. Modeling and policy integration is another area.

The momentum for a new generation in sustainability will be supplied both by the experienced leaders and those who are beginning to engage with this work amongst the next generation of researchers. These young people will have to consider Future Earth issues and offer novel solutions in a social and political context which has already undergone and will

continue to be subject to rapid, successive and unpredictable transformations. Anthropogenic fears and drivers, changes in ownership patterns, changing demographics and economic structures, and, perhaps most crucially, technology will be key.

While this is a brand new field without any guarantee of success, we need to think about the next generation of integrated assessments and integrate these factors. If not modeling then at least on the descriptive side. We will need to go beyond models to create narratives; stories on how things will develop – and outline consistently how these things might happen and come up with non-traditional solutions.

The cognitive aspects of human behavior will also be crucial. In the past bridges have been built between disciplines which had previously been considered unbridgeable. If you have the imagination you can put this into action, and connect modeling and social systems. You should undertake this task as soon as possible.

(5) NIES need to give further consideration to the mechanisms, incentives and triggers for the transition to a low carbon society (LCS)

Technology will facilitate a quantum leap in the transition to LCS, and that technology is ready. Nevertheless we need to give further consideration to the mechanisms, incentives and triggers which will induce this transition, foremost of which is the necessity to incorporate the concept of behavior into the social sciences.

Scaling down to the metropolitan level is of advantage, as mayors are the only decision-makers that are concerned with all aspects from water and waste to air pollution and economic activity. However, many issues must also be negotiated at the national or prefectural levels, for example energy and transport, so a coordinated discussion for the administrative levels of government is necessary to point in the direction for policy and targets.

Even if a Japanese family were to take all the measures you recommend for LCS at the household level, while they will save a certain amount of money, this cannot be the primary incentive. The benefit has to match the effort, so we must identify the real triggers. The government is strongly in support of the transition to LCS, so we must capitalize on this to expedite the process by identifying triggers, incentives and mechanisms, with technology and behavior being the keys.

(6) NIES should maintain a global perspective even when dealing with local issues

On local levels nexus issues (Future Earth), transboundary collaborations (air quality), aging society are not discussed, rather the local actors only push their own agendas, such as water, waste or energy. You should seek to integrate by maintaining a global perspective and

applying it to local contexts to the extent possible.

Nexus issues should be a focus, and NIES should think about how to achieve a synergy. As resources are limited, NIES and IIASA could work together to bring different approaches with separate methodologies to achieve a different understanding. The global context for nexus issues of water, food, and so on, is quite important for an understanding of the dynamics. At the same time, understanding the local dynamics of urban areas, urban sprawl, and the conditions under which it occurs will also inform an understanding of global change and what is potentially forthcoming.

Air quality issues have geopolitical dimensions, in particular air quality control. Japan, China and Korea are all involved in discussions with IIASA which will further progress on this transboundary issue.

Work remains to be done to establish a global scale carbon management mechanism to reduce emissions in developing countries, which will be facilitated by changes in infrastructure. When working on local levels it is very important that the current successes are capitalized on as disinvestment may be around the corner, for example when funding goes to local projects. The transition to local society also requires construction strategies.

Post-Fukushima it has been difficult to incorporate the global and continental perspective into the specific local scales but if this perspective, of internalizing these future benefits into the current discussions, can be maintained, it will be beneficial in 10 to 15 years and will encourage interest and investment.

(7) Joint appointments are recommended to increase connections and facilitate future collaboration

In terms of the forthcoming modalities for future collaboration, we should actively stimulate and promote a system of joint appointments. Joint appointments between institutions should be encouraged in Japan and, if possible, such exchanges between IIASA and NIES should also be facilitated. Similarly, there are good precedents of working six months in a university and six in an institute.

If you prioritize the drawing-up of contracts and so on to facilitate it, such a system will undoubtedly increase your connections and will prove a very effective way to collaborate.



Professor Dr. Kabat  
カバット博士



Professor Dr. Nakicenovic  
ナキセノヴィッチ博士



Professor Lee  
リー教授



Presentation and discussions with the NIES President's Office and NIES researchers  
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