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AsiaFlux Newsletter

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Message from the Chairman of AsiaFlux

Guirui YU

Institute of Geographic Sciences and Natural Resources Research,
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Since established in 1999, AsiaFlux has been dedicated to the long-term observation of carbon, nitrogen, water and energy fluxes at different types of terrestrial ecosystems in Asia, to reveal the processes and underlying mechanisms of carbon, water and energy exchange between terrestrial ecosystems and the atmosphere at different temporal and spatial scales, and to serve the ecosystems management, human life and social sustainable development in Asia.

After 20 years of development, AsiaFlux has developed into a regional research network composed of 28 member countries. More than 100 flux observation stations have been built in Asia, covering diverse terrestrial ecosystems including tropical rainforest, subtropical evergreen broadleaved forest, coniferous and broadleaved forest, temperate coniferous forest, temperate grassland, alpine meadow, shrub, farmland and wetland. In the past 20 years, researchers of AsiaFlux have made great progresses in the development of ob-

servational theories and techniques, observational instruments and simulation models, and analysis of ecosystem flux processes, which have made outstanding contributions to the development of global flux observation.

AsiaFlux persists in the aims of establishing ecosystem carbon, nitrogen, water and energy cycling observation systems in Asian region, accumulating and building a shared database for regional cooperative research, organizing academic exchange activities on the land surface flux observations, ecosystem processes and global climate change research, training flux observation and data analysis techniques, to achieve the prospects of deep cooperative research in flux observations and cultivation of more excellent young scientists in the Asian region.

AsiaFlux has greatly contributed to the sustainable development of flux observation in Asia, but it also faced many challenges



during the developing processes. At present, it is urgent to accelerate the accumulation of observation data and its integration analysis, improve the data quality and the sharing level of data resources, conduct studies of carbon, nitrogen, water coupling cycle process and its mechanism in terrestrial ecosystem, accurately evaluate the dynamic change and spatial pattern of carbon, nitrogen, water and energy exchange process, source and sink relationships and ecological effects on terrestrial ecosystems, and deeply understand the response and adaptation of ecological processes to the global environmental change and human activities. Moreover, it is necessary to develop new technologies for flux observation, develop the ground-aircraft-satellite integrated observation systems, combine flux observation, geospatial analysis and model simulation, promote the linkage of flux observation networks with ecosystem observation research networks, Earth-critical-zone observation networks, stable isotope observation networks and Future Earth plans, strengthen the cooperation and exchange between AsiaFlux members and various observation networks, and establish new regional observation research cooperation mechanisms in the Asian region for the new era.

Currently, AsiaFlux stands in the transition period of heading for multi-approach and multi-technology integration application, and cross-station, cross-region and cross-discipline comprehensive study. At this important historical stage, I am so honored to undertake the President of AsiaFlux-a full of responsibility and challenge position. Thanks to the distinguished contributions and extraordinary efforts made by the previous presidents. I will fully devote myself to the AsiaFlux development, working with all members to promote AsiaFlux to make new achievement!

AsiaFlux will hold its twentieth anniversary workshop in Takayama, Japan, in October 2019. We will celebrate the twentieth anniversary of AsiaFlux, review its developing progress, and discuss future work focus, put forward the direction and action plan of AsiaFlux.

We sincerely look forward to your join!



Figure-1: Prof. Yu



Farewell greetings from ex-chairs

Yoshikazu OHTANI

ex- Forest and Forest Products Research Institute

My farewell greeting to the AsiaFlux members

On my retirement from the advisory committee member, I would like to tell you a little old story of my experiences with AsiaFlux members. In 2004, I took over the AsiaFlux chair from Dr. Yamamoto. It's hard to believe that 14 years has passed from that day –how time flies.

In 1998, the scientific meeting named “Field measurement of carbon dioxide, water vapor and heat fluxes -Toward the establishment of research network-” took place in Japan facilitated by Dr. Yamamoto and Dr. Harazono. As you know, this activity was descended from the constitution of FLUXNET. Following the meeting, AsiaFlux was established in 1999 with the purpose of to study the exchange of carbon dioxide, water vapor, and energy between terrestrial ecosystems and the atmosphere across daily to inter-annual time scales.

During the first five years when Professor Fukushima and Dr. Yamamoto served as chairpersons, AsiaFlux members had religiously discussed on a wide variety of AsiaFlux tasks regarding Global Warming, terrestrial carbon balance and the behavior of FLUXNET, mainly in the AsiaFlux Workshop held every year. After that, since AsiaFlux member aspired for steady and continuous activities on secure budgets, AsiaFlux executives made a thorough proposal to related research projects at every opportunity. We finally acquired two projects for AsiaFlux activities, and it was also a result that the senior executive's long-standing efforts bearing fruit.

In active comings and goings, small troubles were inseparable from the project management. For example, since the project from APN (Asia-Pacific Network for Global Change Research) was the budget on a U.S. dollar basis (it was the first time for us), general affairs in my research institute strongly worried about the fund operation such as the treatment of the foreign exchange gain/loss in the annual budget, etc. With the help of AsiaFlux secretaries, however, we could overcome the difficult phase over the run-up of the project. Such communication was unobtainable experience for me if I were doing research only. Spending my three years from

2004, we gradually implemented the organization and regime of AsiaFlux. It would be laying the groundwork up to today.

I also have learned through my AsiaFlux experiences. Professor Kim, chair and co-chair together, often told us that “stewardship” was important for our activities. In a restricted sense, stewardship may mean some duty of care as a good manager. This is not only expected addresses for AsiaFlux executives, but it also has much broader meaning as giving research findings back to society for all the AsiaFlux members. He was extremely conscious of what was needed to be taken care of the environment stewardship.

In the final year of the term, we consulted on the separation of Japanese and AsiaFlux organizations by building JapanFlux. I was afraid that we did not spend enough time to discuss about the necessity of Japanese organization in umbrella organization-AsiaFlux. I have nothing but apologies for this short notice to Professor Hirano, the first chair of the JapanFlux. Anyway, Professor Kim took up AsiaFlux chair in 2008, as the first person from outside Japan. His execution and the start of JapanFlux let us know AsiaFlux turned out to be a real Asian network.

At the end, I would express my gratitude for all the AsiaFlux members. Special thanks to the AsiaFlux committee members gathered from Asia for sharing a common sense of purpose about AsiaFlux management, to the local organizing committee members of the AsiaFlux workshops for their great help of driving events, and to the members of AsiaFlux secretary really for anything and everything. Especially I would return thanks to the members of the day of Forest Meteorology Laboratory, FFPRI sometimes put spurs to me. It must have been hard for us without their amazing handling of the project related documents and budgets.

Thank you so much again for all the support during the time I worked for AsiaFlux. I have enjoyed my tenure at AsiaFlux, learned so much and I appreciate having had the opportunity to work with you.

Best of luck in the AsiaFlux activities!



Farewell greetings from ex-chairs

Akira MIYATA

Institute for Agro-Environmental Sciences,
National Agriculture and Food Research Organization

Dear AsiaFlux members.

One and half years have already passed since the term of the previous members of the Chairboard and the Science Steering Committee (SSC) was over. I would like to express my gratitude to the previous Vice-Chairs, Prof. Shenggong Li and Dr. Nobuko Saigusa, all the members of the previous SSC, and the secretaries, Ms. Sawako Tanaka and Ms. Yukimi Nakata, for supporting me with dedication and patience.

When I look back our term, various meetings we had here and there in Asia come to my mind. We had the regular workshops at International Rice Research Institute, Los Baños, the Philippines, Indian Institute of Tropical Meteorology, Pune, India, and Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China. We also had small but focused meetings in Mymensingh in Bangladesh, Cat Tien in Viet Nam, and Taipei,

Taiwan. I would like to express my sincere gratitude to all the people who volunteered to arrange and to manage these meetings. I believe that the meetings were useful for promoting our collaboration with Southeast and South Asian countries. At the same time, I wish we could have a little larger amount of international research funds all the Asian scientists can apply for and use on an equal footing. I also wish we could come and go between Asian countries more economically and without visa. These would be great help for promoting our collaboration further.

Under the new leadership of experienced Chair and Vice-Chair, Profs. Guirui Yu and Takashi Hirano, with the refreshed SSC members, AsiaFlux had a joint meeting with OzFlux last year and is now preparing for the 20th anniversary. AsiaFlux has been supported by voluntary actions of its members in the last two decades. I expect your proactive involvement in the coming third decade of AsiaFlux as well.



Figure-2: Dr. Miyata, Field excursion at Darwin, Australia in 2018.



Summary report of Joint conference of AsiaFlux Workshop 2017 and the 15th Anniversary Celebration of ChinaFLUX held in Beijing

Leiming ZHANG and Xuefa WEN

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On August 16-19, the joint conference of AsiaFlux Workshop 2017 and the 15th Anniversary Celebration of ChinaFLUX was held at the Beijing International Convention Center (BICC). The thesis of AsiaFlux Workshop 2017 is "Linking ecosystem flux measurements and carbon management to global change". The conference was hosted by AsiaFlux and ChinaFLUX, and was organized by the Institute of Geographic Sciences and Natural Resources Research (IGSNRR), Chinese Academy of Sciences. More than 220 experts, scholars and graduate students from Japan, South Korea, Malaysia, India, Indonesia, Bangladesh, Thailand, Egypt, the United States, Germany and China attended this conference.

At the opening ceremony of the AsiaFlux Workshop 2017, Prof. Guirui Yu, deputy director of IGSNRR, delivered a warm welcome speech on behalf of the organizer. Prof. Akira Miyata, Chairman of AsiaFlux, made a systematic report on the achievements and future directions of AsiaFlux. Afterwards, Prof. Xuhui Lee (Yale University), Prof. Joon Kim (Seoul National University), Dr. Trevor F. Keenan (Lawrence Berkeley National Laboratory), and Dr. Mirco Migliavacca (Max Planck Institute) gave the keynote speech focused on the theory and application of flux research in the global carbon cycle, respectively.

The 15th Anniversary Celebration of ChinaFLUX was held On August 18. Academician Honglie Sun and Academician Wenhua Li presented in the meeting, and they sent messages and put forward ardent expectations to the future of ChinaFLUX. Prof. Xing Gao (deputy director of IGSNRR), Prof. Akira Miyata (Chairman of AsiaFlux), and Prof. Joon Kim (Chairman of KoFlux) delivered their best wishes successively. A documentary film, titled as "the 15th Anniversary of ChinaFLUX: Retrospect and Prospect", introduced the development history of ChinaFLUX. After that, Professor Guirui Yu, the director of ChinaFLUX, systematically expounded the future development direction and

research objectives of ChinaFLUX.

During the ceremony, the honorary certifications were awarded to the scientists and department leaders for thanks their significant contributions and long-term support to the development of ChinaFLUX. Subsequently, the first ChinaFLUX & GENE outstanding paper award was issued in recognition of the important achievements of ChinaFLUX in the past 15 years, on site. A total of 39 representative papers from 28 people received the first, second and third prizes.

For the scientific activities, six sessions were included in this conference, i.e. (1) Carbon fluxes and integrated analysis and assessment of regional carbon budget; (2) Flux network-based carbon flux upscaling from canopies to regional and global scales by remote sensing and models; (3) Linking fluxes to ecosystem management and policy making; (4) New initiatives in flux measurement techniques; (5) Soil greenhouse gas fluxes and their underlying mechanisms; (6) Long-term flux database: its construction, analysis and application. Totally, 4 keynote speeches, 3 thematic speeches, 43 oral reports, and 38 posters were presented in this conference.



Figure-3. Conference scene



As an important part of the AsiaFlux workshop, the AsiaFlux training course on flux observation theory and technology was held on August 14-16 at IGSNRR. This training course is also the 12th flux observation theory and technical training course of ChinaFLUX. A total of 81 trainees from China, Japan, Korea, Malaysia, India, Indonesia, Bangladesh, Thailand, and Egypt attended the training, and 10 of them won the Best Performance Award.

As a regional flux observation research network, AsiaFlux workshop reflects the latest developments and the highest level of flux observations in Asia, has received extensive attention from the relevant research institutes and personnel around the world. At the same time, technical training during the workshop has also become an important way to cultivate young technical talents in the Asian region.



Figure-4: AsiaFlux and ChinaFLUX Joint Conference



Figure-5: ChinaFLUX 15th Anniversary



Figure-6: Training course scene



Figure-7: Training course group photo.



Figure-8, 9: Field Excursion



Report of AsiaFlux special session in the 15th International Peat Congress

Takashi Hirano¹⁾, Ryuichi Hirata²⁾ and Lulie Melling³⁾

1) Hokkaido University, Japan

2) National Institute for Environmental Studies, Japan

3) Sarawak Tropical Peat Research Institute, Malaysia

The 15th International Peat Congress (IPC) was held during 15–19 August 2016 at the Pullman Hotel Kuching, Sarawak, Malaysia with the theme of Peatlands in Harmony “Agriculture, Industry and Nature”. International Peat Society (IPS; <http://www.peatsociety.org/>) has held IPC every four years, like the Olympic Games, and this is the first IPC held in Asia. The IPC was hosted by Malaysian Peat Society with the great logistical support of Tropical Peat Research Laboratory (TPRL) Unit in the Chief Ministry’s Department of Sarawak, Malaysia. The IPC gathered more than 1000 participants from scientific, governmental and industrial sectors in 32 countries, of which Malaysia was the largest participant supplier (578) followed by Indonesia (186) and Japan (42). The program included ten keynote speeches, 197 oral presentations and 138 poster presentations. The majority of the

presentations were concerned with ‘hot’ tropical peat from the viewpoint of carbon issues.

The AsiaFlux special session was held on 17th, gathering about 40 participants, with ten oral presentations on greenhouse gas (GHG) flux in peatlands using the eddy covariance or chamber technique. Nine of the ten presentations dealt with the effects of disturbance, such as land-use change, on GHGs flux in tropical peatland, and another one was on boreal and arctic wetlands. Except for the AsiaFlux session, there were also many presentations on GHGs flux in tropical peatlands.

The next IPC will come back to Northern Europe, Estonia, in 2020.



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From Editor

This issue of AsiaFlux Newsletter includes reports of before last workshops organized by AsiaFlux and other affiliated institutes. The international conference is very fruitful and exciting for me. I would like to make an effort to assist for AsiaFlux as one of the community member.

At last, I apologize late published it.