

# International Newsletter

Wood Research Institute



Kyoto University, Japan



## A Greeting from A New Chair of the International Committee of WRI What I Am Learning A Little about Indonesia by Chance

*Mikio Shimada*

*The Chair of the Comittee of the International  
Academic Exchange, WRI, Kyoto University*

Hello everyone in both Indonesia and Japan ! This is a kind of greeting from a new chair of the international committee of WRI. It is my great pleasure to put my time and energy into the Core University Program for cooperative exchange of researchers and their research

collaboration .

I do not have anything particular to describe here, but taking advantage of the international collaboration, I feel it a lot of fun to learn something new about history, culture, politics, society and so forth of this country from Indonesian scientists.

In 1996, I could visit Indonesia for the first time with other staffs, including Diector Prof. Kuwahara. It was very much exciting for me to see around in spite of a short period, because I did not know anything about "keindahan Indonesia", except for a story of Lady Kartini who has been regarded as a mother of Indonesian modernization before the age of Soekarno

and about the Pancasila Principles which play an important role in integrating a great many heterogeneous people. The book was written by late Prof. Kenji Tuchiya of Center for Southeast Asian Studies of Kyoto University. The other day, I happened to read a review article, "Images of Colonial Cities in the Netherlands Indies: As Reflected in Some Early Balai Poestaka Novels" written by Prof. Tsuyoshi Kato (CSEAS, Kyoto University). He introduced outlines of Indonesian novels such as "Sitti Noerbaja-Kasih Ta' Sampai", "Student Hidjo", "Rasa Merdeka", etc., I was also impressed by the article from the same Center that the beautiful Indonesian dance and music, including gamelan music, fascinated many Europeans at the time of the 1889 Paris Exposition and also influenced a famous French music composer Debussy to change his old style strongly obsessed by Wagner.

When I was watching a TV program broadcast by NHK the other day, I learned that Republic Nation of Nauru in South Pacific Ocean with about 10,000 people is now facing crissis of running out of billion dollar resource of phosphate rock. This country used to be one of the richest countries thanks to the phosphate resource. However, it has been reported that sooner or later they have to swich to develop a new industry, for example, fishery to survive. Come to think of it, we still remember "oil crisis" or "energy crisis". Thus, I am afraid that there will be "crisis of wood resources" in tropical countries. To avoid this catastophic crisis and to continue the international cooperative research, I wonder if sufficient capital input is being conducted for the sustainable forest management secured by persistent reforestation from a global aspect in tropical countries we depend on.



*Prof. Mikio Shimada*

## Research Institute for Human Settlements

### Its Roles in the Development of Wood and Wood Based Product for Building Materials

*Anita Firmanti Lovian*



*Ms. Anita Firmanti Lovian*

The Research Institute for Human Settlements (RIHS) is one of the three research institutions under the Agency for Research and Development (ARD), Ministry of Public Works. This research institute carries out the activities of research and investigation in the field of human settlements covering housing, building, water supply, sanitation as well as urban and rural planning.

RIHS is the latest form of the institution development, since its establishment in 1953 as a Building Research Institute, and then in 1974 changed to the Directorate of Building Research (DBR) under the Directorate General of Human Settlements (Cipta Karya), Ministry of Public Works. Previous locations of RIHS were at Jl. Tamansari 84 for the main office, and Jl Turangga 5-7 for the laboratories. Both are in the central city of Bandung. In the end of 1990, all activities of RIHS were transferred to the new office at Jl. Panyaungan, Cileunyi Wetan, Kabupaten Bandung. The new office with the laboratories and all facilities including the experimental buildings is occupying about 10 hectares land.

The research subjects are: building materials, housing and building, human settlements environment, spatical planning, building construction and building structure, building safety, clean water and sanitation. Each subject supported by researchers and technicians. Through the

cooperation between RIHS and JICA since 1991, RIHS has been provided with some sophisticated equipment for testing on materials, construction system, chemical analysis and others.

Since its establishment, RIHS has played an important role in the development of local building materials including wood and wood based materials. For promoting the efficient use of timbers, some wood drying and preservation plants have been built in Jakarta, Pontianak, Medan, Yogyakarta and Bali by the supervision of RIHS researchers and staffs. The first particle board plant was also built in Sukabumi, West Java in 1975 for promoting the utilization of rubber wood as a waste from the rubber crop plantation.

Many technologies in the production and utilization of wood and wood based materials for building materials have been produced for supporting the housing program development. In order to get the efficient use of timber in housing and building construction, standards and manuals were also established. Standard code of practice of timber construction in Indonesia was established in 1961, but has not been revised up to now although the wood technologies have been developed. The wood and wood product export booming in 1970's resulted in the de-

crease of using timbers in domestic housing and building construction. Timber constructions with high quality timber were expensive and un-affordable for medium to low income peoples. The low income peoples who used low quality timbers as housing materials had felt that their houses were only temporary ones. At that time, research and development of wood and wood based materials in Indonesia including RIHS mostly aimed for supporting the wood industries.

The increase of construction cost especially concrete and masonry materials is affected by the transportation cost from the quay, creating efforts for developing alternative building materials and construction technologies. Using wood and wood based materials from the low-density timbers in the housing and building construction activities is one of the alternative ways for solving the problems.

For supporting the development of wood and wood based materials in the housing and building constructions, research activities based on the existing condition of raw materials have been conducted. Timbers from natural forest in domestic market which are affordable for most peoples are classified as Meranti Campuran (mixed Meranti/Lauan) and mixed hardwood so called Borneo group. Other potential timber resource for building materials is Hutan Tanaman Industri (Timber Estate Crops) with fast growing species stocks. Most peoples have an impression that timber of fast growing species are low strength and non-durable. Because the strength of timber is affected not only by its density but also its imperfection condition, the strength of a piece of wood from fast growing species could be stronger than from mixed tropical species.



*Main Office of the Research Institute for Human Settlements (RIHS)*

For anticipating this condition, RIHS in cooperation with Bogor Agricultural University has been conducted research on timber grading, and produced grading machine as well as the system for its implementation. Other important aspect for wood as building materials is the treatability, and the main parameter affecting this has been studied. Board production technologies using mixed tropical hardwood and fast growing species as raw materials with organic adhesives as well as inorganic bonding agents are also studies. For timber construction, main re-

search activities are dealing with connectors, buckling property and glue laminated timber.

With limited researchers and research budget, but having some sophisticated equipments and facilities, RIHS invites any researchers and scientists from any institutes to have cooperation in related scope for the best condition of timber construction development in Indonesia.

University (China), R & D Centre for Applied Physics (Indonesia), Forest Research Institute (New Zealand), CNRS (France) and Forintek (Canada). The establishments of general agreement exchange with CSIRO (Australia) and UPM (Malaysia) are in progress. Based on such agreements, for example, WRI and Nanjing Forestry University exchange young researchers with each other every year in order to promote mutual understandings, besides conducting cooperative research works. This year, Dr. Li Dagang and Mr. Shi Dexing from the College of Wood Science and Technology, Nanjing Forestry University, visited WRI for a month in August, during which research works on wood identification, moisture transfer and rheological behavior of wood had been conducted. From WRI, Dr. Takashi Watanabe and Dr. Toshimitsu Hata are to pay a visit to Nanjing Forestry University in September, to deliver lectures and to hold discussions on the related fields of wood science. It is hoped that such mutual exchanges would further widen our scope of cooperative research activities.

## WRI and Global Research Cooperation Programs

*Shuichi KAWAI, WRI, Kyoto University*



*Prof. Shuichi Kawai*

Wood Research Institute (WRI) has long been actively involved in the promotion of international intellectual exchange and cooperation via various aca-

demical activities. Of late, concerted efforts are focused on the harmonic development of bio-resources, such as wood and other ligno-cellulosic resources, for both sustainable utilization and environmental conservation on a global scale. Cooperation at the international level in the field of wood science and technology is thus becoming increasingly important in recent years. Promoting the needs of such international cooperation encourages more synchronized and systematic movements in academic activities. This has re-



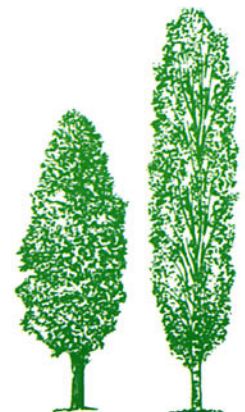
*Dr. Hiroyuki Yano (right) and CSIRO scientists*



*Dr. Li Dagang (right) and Prof. Takao Ito having a discussion on wood identification, at the Lab. of Cell Structure and Function, WRI.*

sulted in the successful establishment of core university program between WRI and R & D Centre for Applied Physics, LIPI, Indonesia, supported by JSPS; as well as the exchanges of general agreements for academic cooperation with foreign universities and research organizations.

To date, WRI has exchanged general agreements with Nanjing For-



From the editorial board

Exchange of Scientists  
FY 1999

The JSPS Core University Program between Wood Research Institute (WRI), Kyoto University and the Research and Development Center for Applied Physics, LIPI in the field of Wood Science allocates travel expenses for exchange of scientists. The following is the list of exchange of scientists in FY 1999.

1) Scientist Exchange

From Japan to Indonesia

Dr. K. Fukushima (Nagoya Univ.)  
22, Jul. - 4, Aug.  
Dr. I. Iida (Kyoto Prefectural Univ.)  
1, Aug. - 13, Aug.  
Dr. N. Hattori (Tokyo Univ. Agric. Technol.)  
1, Aug. - 13, Aug.  
Dr. Y. Kanagawa (Kochi Univ.)  
9, Sept. - 19, Sept.  
Dr. J. Azuma (Kyoto Univ.)  
22, Sept. - 4, Oct.  
Dr. S. Yokota (Utsunomiya Univ.)  
9, Nov. - 18, Nov.  
Dr. M. Higuchi (Kyusyu Univ.)  
18, Nov. - 24, Nov.  
Mr. T. Nomura (Kyoto Univ.)  
1, Dec. - 14, Dec.;  
Dr. M. Shimada (Kyoto Univ.)  
15, Dec. - 21, Dec.  
Mr. Y. Shiomi (Kyoto Univ.)  
15, Dec. - 21, Dec.  
Dr. K. Arima (The Univ, Tokyo)  
1, Feb. - 14, Feb.

From Indonesia to Japan

Dr. R. K. Sari (Bogor Agric. Univ.)  
1, Jul. - 14, Jul.  
Dr. R. Yusiasih (R & D Center for Appl. Physics)  
1, Jul. - 14, Jul.  
Dr. L. Karlinasari (Bogor Agric. Univ.)  
1, Jul. - 14, Jul.  
Dr. S. Pujiastuti (R & D Center for Appl. Physics)  
1, Jul. - 14, Jul.

Dr. M. Y. Massuaya (Bogor Agric. Univ.)  
1, Jul. - 14, Jul.  
Dr. E. Hermiati (R & D Center for Appl. Physics)  
1, Jul. - 14, Jul.  
Dr. R. M. Siagian (For. Prod. Socio Econ. R & D Center)  
1, Sept. - 14, Sept.  
Dr. E. Rasyid (Winaya Mukti Univ.)  
1, Sept. - 14, Sept.  
Dr. N. Sumiasri (R & D Center for Appl. Physics)  
1, Sept. - 14, Sept.  
Dr. R. Dungani (Winaya Mukti Univ.)  
12, Sept. - 25, Sept.  
Dr. S. Danu (Nat. Atom. Energ. Agency)  
1, Feb. - 14, Feb.  
Dr. E. A. Widjaja (R & D Center for Biology)  
1, Feb. - 14, Feb.

2) Cooperative Research

From Japan to Indonesia

Dr. T. Okuyama (Nagoya Univ.)  
22, Jul. - 10, Aug.  
Dr. H. Yamamoto (Nagoya Univ.)  
22, Jul. - 10, Aug.  
Dr. K. Sakai (Kyusyu Univ.)  
11, Aug. - 14, Aug.  
Dr. I. Furukawa (Tottori Univ.)  
27, Aug. - 7, Sept.  
Dr. R. Funada (Hokkaido Univ.)  
27, Aug. - 7, Sept.  
Dr. M. Sugimori (Ehime Univ.)  
6, Sept. - 19, Sept.  
Dr. R. Kondo (Kyusyu Univ.)  
20, Sept. - 28, Sept.  
Dr. Y. Fujii (Kyoto Univ.)  
18, Oct. - 23, Oct.  
Dr. T. Yoshimura (Kyoto Univ.)  
18, Oct. - 30, Oct.  
Dr. S. Kawai (Gifu Univ.)  
4, Nov. - 12, Nov.  
Dr. M. Kuwahara (Kyoto Univ.)  
15, Dec. - 21, Dec.  
Dr. H. Yano (Kyoto Univ.)  
15, Dec. - 21, Dec.  
Dr. M. Norimoto (Kyoto Univ.)  
10, Jan. - 15, Jan.

From Indonesia to Japan

Dr. E. Basri (For. Prod. Socio Econ. R & D Center)  
28, Jul. - 10, Sept.  
Dr. D. Goenadi (Biotechnol. Res. Inst. for Estate Crops)  
1, Sept. - 20, Sept.  
Dr. B. Subiyanto (R & D Center for Appl. Physics)  
1, Sept. - 29, Nov.  
Dr. N. Sintawardani (R & D Center for Appl. Physics)  
15, Sept. - 13, Dec.  
Dr. E. S. Bakar (Bogor Agric. Univ.)  
24, Sept. - 23, Oct.

Dr. Y. Away (Biotechnol. Res. Inst. for Estate Crops)  
15, Oct. - 28, Oct.  
Dr. B. Prasetya (R & D Center for Appl. Physics)  
15, Oct. - 13, Dec.  
Dr. Y. S. Hadi (Bogor Agric. Univ.)  
25, Oct. - 31, Oct.  
Dr. W. Syafii (Bogor Agric. Univ.)  
15, Jan. - 25, Jan.  
Dr. S. Yusuf (R & D Center for Appl. Physics)  
15, Jan. - 14, Mar.  
Dr. S. N. Marsoem (Gadjah Mada Univ.)  
16, Jan. - 15, Mar.  
Dr. M. Karina (R & D Center for Appl. Physics)  
20, Jan. - 19, Mar.



The Committee of International Academic Exchange

M. Shimada (Chair), T. Itoh, T. Morooka, T. Yoshimuta, T. Hata and M. Inoue

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Illustrations by Tadayoshi Yamamoto  
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