Proceedings of

9th International Workshop on Forest Watershed Environment Research in Cambodia,

21, November 2013
Phnom Penh, Cambodia

Akira Shimizu, Sophal Chann, Haruo Sawada,

Yasuhiro Ohnuki, Koji Tamai (Eds.)

Forestry and Forest Products Research Institute, Japan

Forestry Administration, Cambodia

Scientific Committee

DR. AKIRA SHIMIZU
CWCM Project Coordinator
Industry-University-Government Coordinator
Kyushu Research Center
Forestry & Forest Products Research Institute (FFPRI)
4-11-16 Kurokami, Kumamoto, Kumamoto, 860-0862 JAPAN

MR. SOPHAL CHANN
CWCM Project Coordinator
Forest and Wildlife Research and Development Institute (IRD)
Hanoi Street, Phoum Rongchak, Sankat Phnom Penh Thmei,
Klan Sen Sok, Phnom Penh, Cambodia

DR. HARUO SAWADA
Professor, Institute of Industrial Science
The University of Tokyo
4-6-1 Komaba, Meguro, Tokyo, 153-8505 JAPAN

DR. YASUHIRO OHNUKI
Chief of Soil Geochemistry Laboratory
Forestry & Forest Products Research Institute (FFPRI)
Matsumoto 1, Tsukuba, Ibaraki, 305-8687 JAPAN

DR. KOJI TAMAI
Chief of Forest Hydrology Laboratory
Forestry & Forest Products Research Institute (FFPRI)
Matsumoto 1, Tsukuba, Ibaraki, 305-8687 JAPAN

ISBN: 978-4-905304-29-6

Forestry & Forest Products Research Institute
Matsumoto 1, Tsukuba, Ibaraki, 305-8687 JAPAN

Forestry Administration
40 Preah Norodom Blvd., Phnom Penh, Cambodia

Proceedings of 9th International Workshop on Forest Watershed Environment Research in Cambodia
Published and printed in Cambodia and Japan, February 2014.

Preface

The Mekong River flows from the Tibetan plateau, through Laos, Myanmar, Cambodia, and Vietnam, and into the South China Sea. The appropriate distribution of the water resources of this international river is critical for sustainable development in this region. A large proportion of the Mekong basin is forested, and the forest is believed to have a marked effect on the water cycle. However, few hydrological observations have been conducted in forested areas of the Mekong River basin.

In these ten years research periods, the situation of surrounding forests in this region is changing a lot, and we need to deal with various problems, such as the several types of forest environment change by global warming, maldistribution of water resources in connection with climate change, evaluation of role of the forest in these situations. Therefore, we set up the experimental watersheds of deciduous forests which have occupied maximum area in Cambodia adding to the evergreen forests, and have advanced researches for two main forest types in this region. Consequently, we have studied many subjects in deciduous forests that are as important as evergreen forests in the CWCM project.

The Workshop started in 2004 aiming to release the results of research to society widely from the beginning of the collaborative research project between Cambodia and Japan, and considering it as a part of solutions of all kinds of problems through the friendship with people of different fields. The tropical seasonal forests in flat lands are now very precious in the Indochinese Peninsula, because there are hardly remaining forests except for this region. In Cambodian evergreen forests, we have gained many kinds of information about vegetation composition, soil characteristic, water balance, evapotranspiration, forest climate, etc. Consequently, we have realized the importance of the forest from multilateral viewpoints on environment, timber resource, water resources, etc. In addition to this, for comprehensive understandings of energy, water, and carbon dioxide cycling in forests of Mekong River Basin, it is important to gain the data of deciduous forest and compare the observed results at two forest sites in Cambodia.

This is the 9th workshop holdings once a year. Two years ago, there were the severe flood disasters in the south part of Indochina Peninsula. And also, the severe typhoon attacked Philippines this year. Some persons pointed out that the global warming might be an important factor and the disorderly deforestation might be set to one of the causes of the flood. What is significant in this argument is that we should interpret on the basis of the exact integrated continuous observation data using the stable experimental watershed. Investigating the cause of the disaster by analyzing this kind of data contributes to suitable and sustainable forestry management and sustainable development greatly.

There would be no greater pleasure than if, better forest management or an improvement of a life environment were promoted by profound understanding about forest through this workshop. I deeply appreciate many efforts of Cambodian Forest Administration staff.

SHIMIZU Akira: Conference Secretariat
Industry-University-Government Coordinator
in Kyushu Research Centre
Forestry and Forest Products Research Institute, Japan

CONTENTS

E-02

Spatial fluctuation of soil water content and ground temperature at deciduous and evergreen forests in Cambodia

OHNUKI Yasuhiro, KETH Samkol, ITO Eriko, TITH Bora, CHANN Sophal

E-03

Photosynthetic traits on dry deciduous forest trees in Cambodia

KENZO Tanaka, IIDA Shin ' ichi, SHIMIZU Takanori, TAMAI Koji, KABEYA Naoki, SHIMIZU Akira, CHANN Sophal

Forest Hydrology

H-01

Comparison of measured and simulated H2O/CO2 exchanges over a lowland evergreen forest in central Cambodia

SHIMIZU Takanori, SHIMIZU Akira, TANAKA Katsunoti, KENZO Tanaka, IIDA Shin'ichi, KABEYA Naoki, TAMAI Koji, CHANN Sophal

H-02

Estimation of potential evapotranspiration using Penman method in northern Okinawa, Japan

ARAKAKI Takuya, SHIMIZU Akira, KABEYA Naoki, IKUZAWA Hitoshi, HURUGEN Hiroshi

H-03

Three years water budgets in a deciduous broad-leaved forested watershed of Cambodia in 2010 to 2012

KABEYA Naoki, SHIMIZU Akira, TAMAI Koji, SHIMIZU Takanori, IIDA Shin'ichi, OHNUKI Yasuhiro, CHANN Sophal, SATHA Saing

H-04

Relationship between tree phenology and transpiration activity in a deciduous forest, central Cambodia

IIDA Shin'ichi, SHIMIZU Takanori, ITO Eriko, SHIMIZU Akira, KABEYA Naoki, TAMAI Koji,OHNUKI Yasuhiro, CHANN Sophal, KETH Nang

H-05

Water Cycle Research in Evergreen Forest Watershed, Kampong Thom, Cambodia - Summary and product of the CWCM (Change of Water Cycle in Mekong River) Project -

CHANN Sophal, KETH Nang, SATHA Saing, SHIMIZU Akira, TAMAI Koji, SHIMIZU Takanori, KABEYA Naoki, IIDA Shin'ichi