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PROJECT REPORT for Bilateral Cooperative Program between JAPAN and FINLAND

Assessment Tools for Solving Aquatic Problems

Okayama University Graduate School of Environmental and Life Science **Finnish Environment Institute** Freshwater Centre

•SUPPORTED BY Japan Society for the Promotion of Science and Academy of Finland •PROJECT PERIOD July 2012 – June 2014

Contents

Preface	1
WP1: Project coordination	
Outline of the project	3
List of activities	7
List of participants	8
WP2: Atmospheric modelling and coupling with lake model	
Lake Pyykösjärvi water quality model	10
Timo Huttula and Ninni Liukko	
Coupled simulation for atmospheric and water current models for Lake	
Pyykösjärvi	17
Hiroshi Suito, Mika Kobayashi, Ninni Liukko and Timo Huttula	
Long term trends of pan evaporation and an analysis of its causes in Finland	23
Toshitsugu Moroizumi, Naoya Ito, Jari Koskiaho and Sirkka Tattari	
WP3: Flow and wave measurements and modeling	
Task 3-1: Wave measurements and modeling	
The sink of sediments suspended by waves in Lake Pyhäjärvi	48
Kenji Okubo, Timo Huttula, Hiroshi Suito, Janne Ropponen,	
Akiko Mano and Takashi Nakazawa	
Waves in two shallow lakes in different latitudes with climate change perspective	
- measurements and forecasts	57
Ting Feng Wu, Kenji Okubo, Timo Huttula and Janne Ropponen	
Task 3-2: External and internal loading	
Transport model application in River Vuoksi	58
Janne Ropponen and Timo Huttula	
Total loading curves applied to Lake Pyhäjärvi	69
Kenji Okubo, Jari Koskiaho, Anne-Mari Ventelä and Timo Huttula	
Simplified approach to evaluate total external loading to Kojima Lake	76
Shin-ichi Nishimura, Kenji Okubo, Hidenori Morita, Jari Koskiaho	
and Sirkka Tattari	

Task 3-3: Seto Inland Sea flow modeling

Seto Inland Sea tidal flow simulation	93
Shinya Morifuji, Hiroshi Suito, Janne Ropponen and Kenji Okubo	
Task 3-4: Data assimilation	
Application of the Particle Filter to COHERENS V2 model of Lake Säkylä	än
Pyhäjärvi	101
Akiko Mano and Takayuki Shuku	
Assimilation of satellite data to 3D hydrodynamic model of Lake Säkylän	
Pyhäjärvi	108
Akiko Mano, Olli Malve, Sampsa Koponen, Kari Kallio, Antti Taskinen,	
Janne Ropponen, Janne Juntunen and Ninni Liukko	
WP4: Statistical analysis for habitat modelling and relationship	
between land use and river water quality	
Juvenile salmon patch identification and comparison using Echelon analysis	110
Makiko Oda, Saija Koljonen, Fumio Ishioka, Petteri Alho,	
Hiroshi Suito, Timo Huttula and Koji Kurihara	
Water quality affects diatom diversity in Finnish rivers	121
Makiko Oda, Matti Leppänen, Anna Karjalainen,	
Satu-Maaria Karjalainen, Hiroshi Suito and Timo Huttula	
WP5: Dissemination of the project results	
Aquatic modelling in Finland – experiences and visions, Special lecture at OU <i>Timo Huttula and Janne Ropponen</i>	133
Future prospects	145

Preface

Timo Huttula¹ and Hiroshi Suito²

¹Finnish Environment Institute, Finland ²Okayama University, Japan

This project started in July 2012 as a bilateral collaborative project based on an agreement between the Japan Society for the Promotion of Science (JSPS) and the Academy of Finland (AF). Mutual collaboration of the Graduate School of Environmental and Life Science, Okayama University (OU) and Finnish Environment Institute (Suomen Ympäristökeskus: SYKE) has a long history, which originated in 2004. Collaboration from that time until 2012 revealed many common aquatic problems that exist in our countries and demonstrated that we can support one another in terms of research technologies, data and strategies to address these difficulties. Therefore we agreed to respond to the call from JSPS and AF in 2012 for increased bilateral collaboration.

This project has already addressed various topics related to aquatic problems. Details of the working packages (WPs) of this project are presented in the following pages. This report has gathered the technical reports related to topics, some of which shall be submitted to peer-reviewed scientific journals in the near future.

This report also includes a list of activities and some relevant materials for lectures given by Prof. Timo Huttula at OU.



WP 1

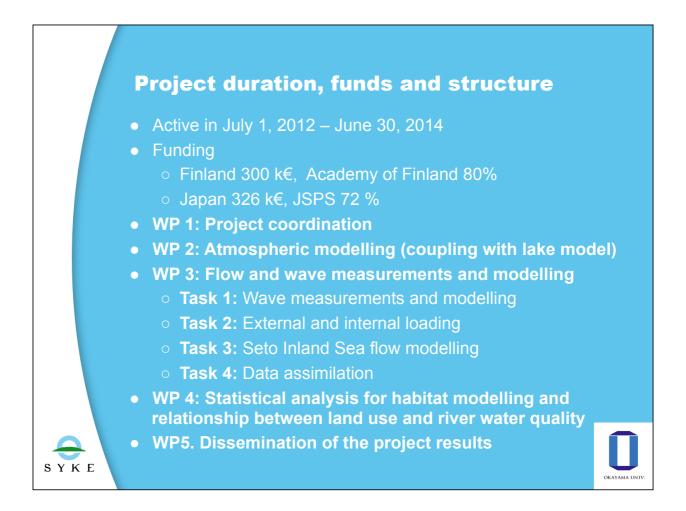
Project coordination



Project plan

Timo Huttula and Hiroshi Suito





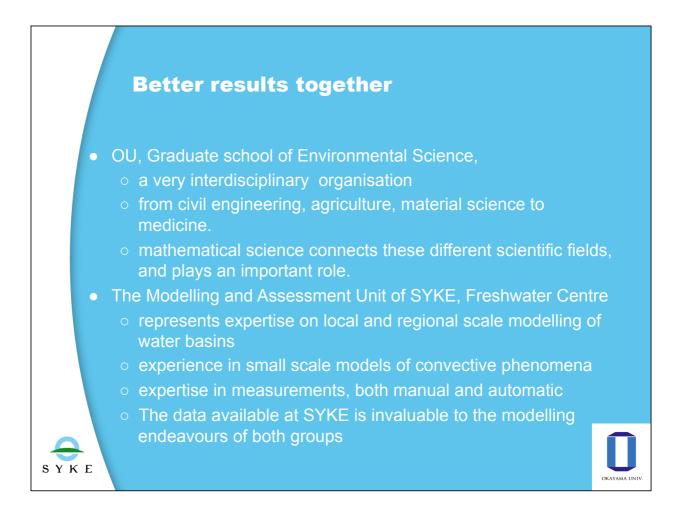


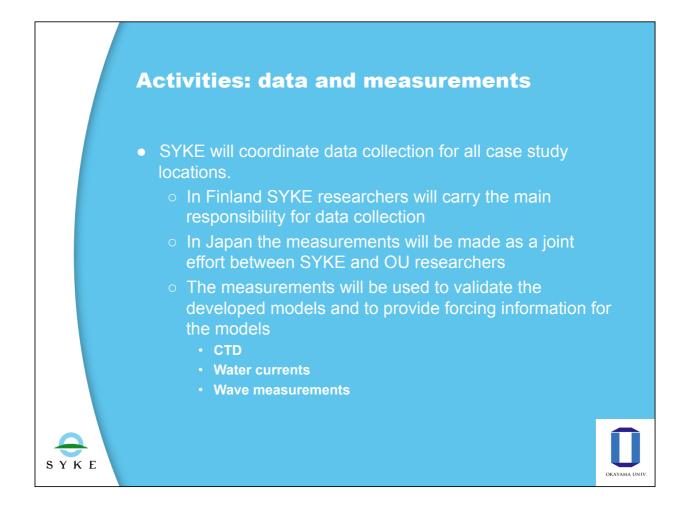
 Main goal: Is to improve our present aquatic models so that we are able to assess the effects of various pressures such as land use changes by intensified urbanisation and agriculture as well us climate change

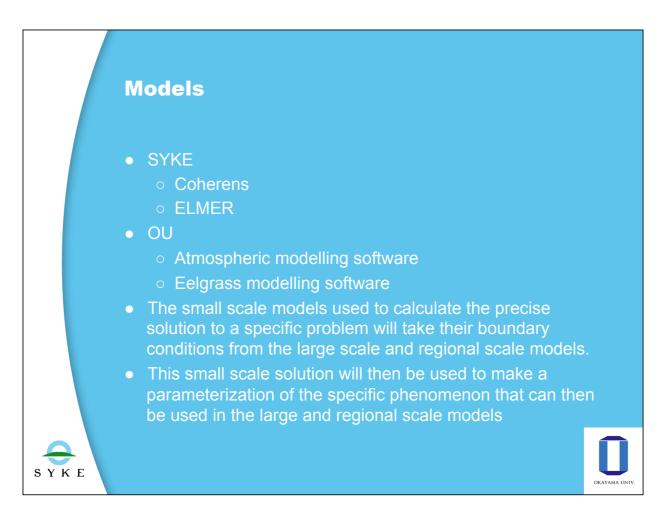
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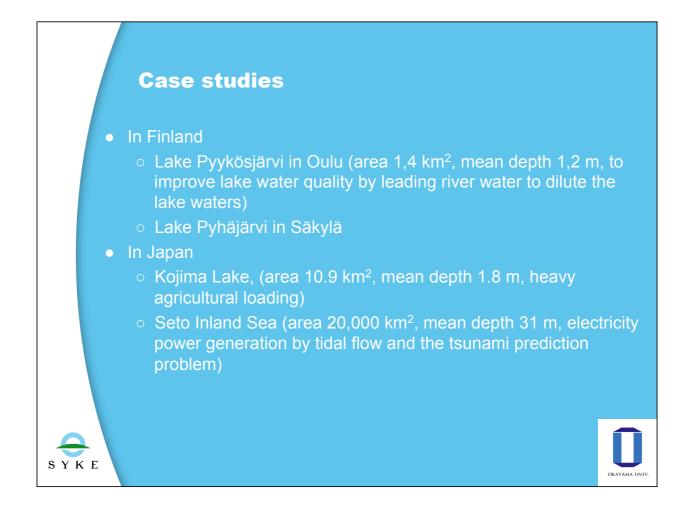
SYKE

- Produce information to study the effects of the spatial variability of the <u>wind field</u> on the current field in a water body and to produce tools that can estimate this.
- To study the effect of reeds on the <u>wave-current</u> <u>interaction</u> in a shallow part of the lake and to study how they effect the erosion of material from the bottom.
- To study how the physical and biological variables interact to produce a <u>habitat</u>, and what are the main driving forces for the locations of different habitats.
- To produce a tool to predict the <u>currents in the Seto</u> <u>Inland Sea</u> and for tsunami forecasting









List of activities

Year	Month	Country	Place	Type of activity	Participants (Japanese)	Participants (Finnish)
2012	July	Finland	Turku Eura Vaasa Oulu	Field trip	Hiroshi Suito Toshitsugu Moroizumi Akiko Mano Mika Kobayashi	Timo Huttula Janne Ropponen
2012	August	Finland	Jyväskylä	Project meeting	Hiroshi Suito Kenji Okubo Shin-ichi Nishimura Shinji Hiejima Kazunori Fujisawa Makiko Oda Akiko Mano Mika Kobayashi	Timo Huttula Olli Malve Janne Ropponen Ninni Liukko Saija Koljonen Niina Kotamäki Hanna Arola and others
2012	November (~Feb. 2013)	Finland	Jyväskylä	Research disccussion	Akiko Mano	Timo Huttula Janne Ropponen
2012	December	Japan	Okayama Hiroshima Imabari Naruto	Project meeting and field trips	Hiroshi Suito Kenji Okubo Shin-ichi Nishimura Akiko Mano Takashi Nakazawa Mika Kobayashi Shinya Morifuji	Timo Huttula Jari Koskiaho Janne Ropponen Ninni Liukko
2012	December (~Feb. 2013)	Finland	Jyväskylä	Research disccussion	Mika Kobayashi	Timo Huttula Janne Ropponen Ninni Liukko
2013	March	Finland	Jyväskylä	Research disccussion	Makiko Oda	Saija Koljonen Matti Leppänen
2013	September	Finland	Helsinki	Project meeting	Hiroshi Suito Kenji Okubo Shin-ichi Nishimura Toshitsugu Moroizumi Makiko Oda Akiko Mano Takashi Nakazawa Shinya Morifuji	Timo Huttula Olli Malve Sirkka Tattari Jari Koskiaho Janne Ropponen Saija Koljonen Niina Kotamäki and others
2013	September (~Nov. 2013)	Finland	Helsinki	Research disccussion	Akiko Mano	Olli Malve and others
2013	September	Finland	Säkylä Eura	Fleld trip	Hiroshi Suito Kenji Okubo Akiko Mano Takashi Nakazawa Shinya Morifuji	Timo Huttula Jari Koskiaho Janne Ropponen
2013	December	Japan	Okayama	Research meeting and field trip	Hiroshi Suito Kenji Okubo Shin-ichi Nishimura Toshitsugu Moroizumi Makiko Oda,	Jari Koskiaho Sirkka Tattari
2014	March	Finland	Jyväskylä	Research disccussion	Hiroshi Suito	Timo Huttula Janne Ropponen
2014	March	Finland	Jyväskylä	Research disccussion	Makiko Oda	Saija Koljonen and others
2014	Мау	Japan	Okayama Katata Kyoto	Research meeting, lectures and field trip	Hiroshi Suito Kenji Okubo Shin-ichi Nishimura Toshitsugu Moroizumi Hidenori Morita Makiko Oda Shinya Morifuji	Timo Huttula

List of participants

Participants by SYKE:

Participants by OU:

Hiroshi Suito

Timo Huttula	
Kirsti Krogerus	
Hanna Arola	
Saija Koljonen	
Niina Kotamäki	
Ninni Liukko	
Janne Roppone	n
Janne Juntuner	I
Olli Malve	
Jari Koskiaho	
Sirkka Tattari	Aff
Matti Leppänen	
Anna Karjalaine	n
Affiliated participant	S:

Anne-Mari Ventelä (Pyhäjärvi Institute) Kai Rasmus (Luode Consulting Ltd.) Kenji Okubo Shin-ichi Nishimura Toshitsugu Moroizumi Hidenori Morita Shinji Hiejima Takayuki Shuku Mika Kobayashi Shinya Morifuji filiated participants: Kazunori Fujisawa (Kyoto University) Makiko Oda (National Defense Medical College) Akiko Mano

(Ochanomizu University) Takashi Nakazawa

(Tohoku University)