



APN/START Global Change Research  
Awareness Raising Symposium in Northeast Asia,  
Vladivostok, Russia, October 7-8, 2002

## **APN 2002-NCB01**

**Final Activity Report**

**February 2003**

# APN/START Global Change Research Awareness Raising Symposium in Northeast Asia (APN 2002-NCB01)

## Abstract

APN/START Global Change Research Awareness Raising Symposium in Northeast Asia was held in Vladivostok City, Russia, October 7-8, 2002. Pre-Symposium activity included Workshop on the Global Change Studies in the Far East organized by FEB RAS NC for IGBP and IMB FEB RAS (October 2-3) and 10<sup>th</sup> TEACOM meeting (Oct. 6); in total, more than 50 scientists and observers from 5 countries took part in these events. The Symposium addressed the need to recognize key problems in regional global change studies and to bring together relevant Russian and foreign researchers and policy-makers to summarize and develop present knowledges and ideas on coastal northeast Asia changes and to develop research proposals to APN. Major outcomes of the Symposium were documentation of the present status of the Russian national research activity on global change issues and development of a proposal to APN, *Climate Variability and Human Activity in Relation to Northeast Asian Land-Ocean Interactions and their Implications for Coastal Zone Management* with participation of Korean, Chinese and Russian researchers.

## Project Information

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**Duration of the project:** October 7-8, 2002

**List of collaborating countries:** Japan, Hong Kong SAR, People's Republic of China, Russian Federation, USA

## Introduction

The APN/START Global Change Research Awareness Raising Symposium in Northeast Asia addressed the need to recognize key problems in local/regional global change studies, focus areas under the impact of climate change and sea-level rise, and to bring together relevant Russian researchers and policy-makers as well as scientists from surrounding countries and international organizations in order to summarize and develop our present knowledges and ideas on coastal northeast Asia changes, to present summaries on the climatic and environmental assessments, to discuss ways of sustainable development and adaptation strategies and to develop a coastal zone research proposal to APN. The initiative helped to increase the awareness among scientific and policy communities of the need of more close scientific collaboration between northeast Asian countries. The Symposium was held as a part of APN networking and capacity building programme.

The APN/START Symposium continued a series of successful workshops organized by the Far East Branch of the Russian Academy of Sciences National Committee (FEB RAS NC) for International Geosphere-Biosphere Programme (IGBP) (Chairman – Prof. Vladimir L. Kasyanov, Secretary – Dr. Konstantin A. Lutaenko) and Institute of Marine Biology (IMB) FEB RAS in Vladivostok since 1996 [**Global Change Studies..., 1996; 1997; 1999; 2000**]. Two workshops held were international (in 1997, in conjunction with TEACOM meeting; and in 1999) and their proceedings with most important papers presented were published in English as *TEACOM Publications* under the sponsorship of the IMB [**Reports of the 7-th TEACOM Meeting..., 1998; Reports of the International Workshop..., 2001; 2002**]. Three main themes were discussed during above-mentioned workshops: land-ocean interactions in the coastal zone, global ocean ecosystem dynamics, and past global changes, particularly those in coastal zone. The activities conducted in 1996-2001 revealed that Russian Far Eastern research community is highly competent but little involved in international projects and programs. Language barrier and cultural and political differences for a long time prevented contacts between Russian, Chinese, Korean and Japanese scholars in global change. Thus, development of regional collaboration and international scientific networks are in need to be improved as well as new links between national research teams and policy-making community in the Russian Far East should be established.

As the duration of the Symposium was limited by two days, Workshop on the Global Change Studies in the Far East with oral presentations of the Russian scientists was held earlier (October 2-3) as a separate meeting and was organized by the same Organizing Committee [**Abstracts of the International Workshop..., 2002**]; all the participants were invited to form a poster session at the APN/START Symposium. This broadened the thematic issues to be discussed during the Symposium and made it possible to document all the variety of research carried on by Russian Far Eastern science community. Another pre-Symposium activities were related to 10<sup>th</sup> TEACOM meeting held on October 6.

## Activities Conducted

The Symposium was held in October 7-8, 2002, in Vladivostok, Russia, with a day and a half of presentations (including poster session), and a half of a day of working groups discussions. The presentation sessions included following topics:

- **Climate Variability, Changes and Impacts in Northeast Asia and Northern Pacific**
- **LOICZ- and GLOBEC-related Research in Northeast Asia and Northern Pacific**
- **PAGES-related Research in Northeast Asia**
- **Different Aspects of Global Change Research**

The Symposium started with opening speeches of Prof. Vladimir L. Kasyanov, Chairman of TEACOM and Principal Organizer of the Symposium, and Prof. Gennady N. Golubev (Moscow State University, Russia), a member of the START Steering Committee. Representatives of LOICZ (Prof. Shu Gao, Nanjing University, China), PAGES (Prof. Wang Pinxian, Tongji University, China), START (Dr. Hassan Virji, USA) and APN (Mr. Martin Rice, Japan) gave overview talks on activities, goals and achievements of these international organizations and their interest in northeast Asia region. Highlights of START's current activities include the ongoing major regional research initiatives (for TEA region, aridification in northern China, and regional climate model intercomparison project for Asia), capacity building (START Fellowship/Visiting scientists programme, young scientists awards, etc.) and some recent new initiatives such as AIACC and David and Lucille Packard Foundation intensive global change institutes. During the last several years, APN made significant efforts in capacity building in East Asia with one workshop in the Republic of Korea, and a symposium in Mongolia, and now in Vladivostok, RFE.

Major topics at the Symposium included regional climate model inter-comparison in Asia, climate change in northwest Pacific in 20<sup>th</sup> century, recent environmental and coastal modifications, Tumen River area ecological assessment, Quaternary paleoenvironmental and climatic history in the Korean Peninsula, northwestern Pacific islands, Okhotsk and Bering Seas. Abstracts of all oral presentations are provided in the Appendix section as well as titles of the posters. In total, 17 papers were delivered by invited key speakers, and more than 30 poster presentations were prepared.

The Symposium was held in conjunction with 10<sup>th</sup> TEACOM meeting (October 6) which was attended by START Deputy Director (Dr. H. Virji), TEACOM members, and relevant scientists – guest from China, Russia, Republic of Korea and Japan. In the TEACOM meeting, progress reports of ongoing TEA regional projects were presented, and afternoon session focused on the LOICZ East Asia Basins Project, and the development of a coastal zone research proposal. The discussions on possible proposal to APN were continued during the meeting of two working groups on the second day of the

Symposium, one for the PAGES initiative, and second – for coastal zone (see below). Unfortunately, PAGES working group failed to identify pinpoints for possible proposal as the past global changes researches are out of APN priorities; however, the second group successfully developed a LOICZ-oriented proposal.

Far East Branch of the RAS NC for IGBP disseminated among the participants recent Russian publication on global change studies (TEACOM Publications nos. 4, 6, 7 and some other).



Participants of the APN/START Global Change Awareness Raising Symposium in Northeast Asia

## Outcomes and Product

The present status of the Russian national research activity and projects on global change issues was well documented. It was identified that major progress was made in PAGES- and LOICZ-related researches, and possible mutual cooperation with surrounding countries (China, Korea and Japan) was discussed.

A proposal to APN, *Climate Variability and Human Activity in Relation to Northeast Asian Land-Ocean Interactions and their Implications for Coastal Zone Management*, was developed with participation of Korean, Chinese and Russian researchers through working group discussions. The proposal intends to investigate current environmental effects on river-ocean system, as results of natural changes and rapid socio-economic development at the area of the selected rivers in the region of the East Asia. It is very important to study the changes in biogeochemical fluxes in the rivers and coastal zones because biogeochemical operation factors determine the vital capacity of ecosystems. River runoff exerts particular effect on biogeochemical operation factors in the coastal zone, therefore it is important to know, which changes occur in the “land-ocean” system, and how human activities would affect the latter. The key questions in the project to be addressed are:

- **How are humans altering the mass balance of water, sediment, nutrient and contaminant fluxes, and what are the consequences?**
- **How do changes in land use, climate and sea level alter fluxes and retention of water and particulate matter in coastal zones, and affect morphodynamics?**
- **How can we apply knowledge of processes and impacts of biogeochemical and socio-economic changes to improve integrated coastal zone management?**

From this perspective, the main goals of the project are as follows:

- To evaluate the impact of the Amur and Tumen Rivers on coastal zones compare with the effect of other major rivers of the region (Russian: the Razdolnaya and other rivers; Korean: the Han, Geum and others rivers; Chinese: the Changjiang, Huanche, Pearl and others rivers)
- To estimate the influence of human activities on river/estuarine ecosystems
- To assess comparative impact of climate variability and human activities on neighboring coastal zones in different regions of the East Asia
- To reveal the effects of climate change on river basins and coastal zone
- To investigate long-term climate fluctuations in the East Asia in relation to the rivers and coastal zones.

The project proposed will also include the following activities:

- To train young scientists for capacity building of the global change research
- To provide information to policy makers on aspects of management of river and coastal ecosystems of the region and encourage them to make practical use of such information

The overall study framework is based on the DPSIR (Drivers – Pressures – State – Impact – Response) framework adopted by the LOICZ core project of the IGBP.

Three volumes of the proceedings of the Symposium are planned to be published in 2004 under the tentative titles: Vol. 1 – *Long-term Ecosystem Dynamics and Global Changes in the Coastal Zone*; Vol. 2 – *Past Global Changes in Northeast Asia*; Vol. 3 – *Climate Variability and Changes in Northwest Pacific and East Asia*. Vol. 1 will be published as a Special Issue of the *Russian Journal of Marine Biology* (in both Russian and English), and the rest as *TEACOM Publications*.



## Conclusions

APN/START Global Change Research Awareness Raising Symposium in Northeast Asia was a remarkable step toward APN's networking and capacity building activities in East Asia and the first meeting of such kind in Russia. The present status of the Russian national research activity on global change issues was well documented and the need for mutual international cooperation was emphasized.

One of the significant outcomes of the APN/START Symposium was development of the proposal to APN which main objective is evaluation of the impact of the Amur and Tumen Rivers on coastal zones in comparison with the effects of other major rivers of the region running in Russia, Korea and China. Project will involve many scientists (including young) into international activities.

The Symposium summarized and developed present knowledges and ideas on coastal northeast Asia changes, discussed ways of sustainable development and adaptation strategies and its participants developed a coastal zone research proposal to APN. This activity should be regarded as a successful and would be continued in future by a series of regional workshops and research initiatives.

## Future Directions

A workshop on land-ocean interactions in the coastal zone of northeast Asia and a training course for young scientists would be conducted as a part of the above-mentioned project submitted to APN. A workshop on future cooperation of the Russian national research teams with Asian global change research community is suggested to be held in one of the Asian countries in order to reach more involvement of the Russian scientists into APN capacity building activity.

Another future direction of the research is targeted at past global/environmental changes during last 100-500 years, i.e., on the scale of hundred of years; in this case, rich experience of the Russian research teams in the field of the Pleistocene-Holocene studies in the Far East and Asian facilities and experience can be integrated.

# **A p p e n d i x**

## Programme

### APN/START GLOBAL CHANGE RESEARCH AWARENESS RAISING SYMPOSIUM IN NORTHEAST ASIA, VLADIVOSTOK, RUSSIA, October 7-8, 2002

VENUE: Hotel Acfes-Seiyo



#### ***October 7 (Monday)***

**8.00 – 9.00** Registration

**9.00 – 12.00** Session 1. Opening

**9.00 – 9.15** Opening speech by Prof. **Vladimir L. Kasyanov**, Chair of TEACOM and Chairman of the Organizing Committee

**9.15 – 9.25** Welcome speech by Vice-Governor of Primorsky Krai, Prof. **Boris I. Geltzer**

**9.25 – 9.40** Welcome speech by Chairman of the Far East Branch, Russian Academy of Sciences **Valentin I. Sergienko**

**9.40 – 10.00** Coffee break

**10.00 – 12.00** **Session 2.** Presentations from international organizations. Chairperson Prof. Congbin Fu

**10.00 – 10.20** Presentation by Mr. **Martin Rice**, Programme Manager of APN

**10.20 – 10.40** Presentation by Dr. **Hassan Virji**, Deputy Director of START

**10.40 – 11.00** Presentation by Prof. **Wang Pinxian**, a representative of PAGES

**11.00 – 11.20** Presentation by Prof. **Shu Gao**, a representative of LOICZ

**11.20 – 11.45** Photo

**12.00 – 13.00** Lunch

**13.00 – 17.00** Session 3. Science presentations: Climate Variability, Changes and Impacts in Northeast Asia and Northern Pacific. Chairperson Prof. Shu Gao

**13.00 – 13.20 Fu Congbin** (START/TEACOM Regional Research Center, Beijing) *Regional Climate Model Inter-comparison Project for Asia*

**13.20 – 13.40 Vladimir Ponomarev, Dmitry Kaplunenko and Vladimir Krokhin** (Pacific Oceanological Institute FEB RAS and Far Eastern Regional Hydrometeorological Institute, Vladivostok) *Climate change in the northeast Asia and northwest Pacific in 20<sup>th</sup> century*

**13.40 – 14.00 Gunter Weller** (University of Alaska, Fairbanks) *Arctic climate impact assessment*

**14.00 – 14.20 Igor Semiletov** (Pacific Oceanological Institute FEB RAS, Vladivostok) *Recent studies of Russian Far Eastern scientists in the northeastern Asia: global change issues*

**14.20 – 14.40** Coffee break

**14.40 – 17.00** Session 4. Science presentations: LOICZ- and GLOBEC-related research in Northeast Asia and Northern Pacific. Chairperson Dr. Yi Hi-II

**14.40 – 15.00 Shu Gao** (Nanjing University, Nanjing) *Mud Deposits over Eastern China Continental Shelves*

**15.00 – 15.20 Fan Wang** (Institute of Oceanology CAS, Qingdao). *The LOICZ-related research in Chinese Academy of Sciences*

**15.20 – 15.40 Je Jong-Geel** (Korea Ocean Research and Development Institute, Seoul) *Recent coastal and environmental modification of tidal flats in Korea and Japan*

**15.40 – 16.00 Wang Pinxian** (Tongji University, Shanghai) *The Western Pacific marginal seas: a sensitive system for Asia-Pacific interactions*

**16.00 – 16.20 Vladimir Darnitskiy and Vladimir Vologdin** (Pacific Fisheries Research Center, Vladivostok) *Changes in geospheres and marine ecosystems of the Far Eastern seas – polycyclic interactions*

**16.20 – 16.40 Vladimir Kasyanov and Dmitry Pitruk** (Institute of Marine Biology FEB RAS, Vladivostok) *Tumen River area ecological assessment and environmental changes in Northeast Asia*

**16.40 – 17.00 M.H. Wong** (Institute for Natural Resources and Environmental Management, Hong Kong Baptist University, Hong Kong, China) *Environmental and health effects of persistent organic pollutants*

**18.00 – 19.30** Poster session

**20.00 – 21.00** Reception (Hotel Acfes-Seiyo)

## October 8 (Tuesday)

**8.30 – 12.00** Session 4. Science presentations: PAGES-related research in Northeast Asia. Chairperson Prof. M.H. Wong

**8.30 – 8.50** **Hi-Il Yi, Im Chul Shin and Dong-Hyeok Shin** (Korea Ocean Research and Development Institute, Seoul) *Paleoenvironmental and paleoclimatic history of surrounding seas in the Korean Peninsula*

**8.50 – 9.10** **Nadezhda G. Razjigaeva** (Pacific Institute of Geography FEB RAS, Vladivostok) *Environment development of the northwestern Pacific Islands in the Holocene*

**9.10 – 9.30** **Sergei A. Gorbarenko, Valentin Leskov and Irina Gvozdeva** (Pacific Oceanological Institute FEB RAS, Vladivostok) *Late Quaternary paleoenvironmental changes in the Okhotsk and Bering Seas and their implication for the North Pacific*

**9.30 – 10.00** Coffee break

**10.00 – 12.00** Session 5. Science presentations: Different aspects of global change research. Chairperson Prof. Vladimir Kasyanov

**10.00 – 10.20** **Alexander Makhinov** (Institute of Water and Ecological Problems FEB RAS, Khabarovsk) *An evaluation of changes in Amur River runoff, suspended material and solutes under the impact of economic activity within its basin*

**10.20 - 10.40** **Gennady N. Golubev** (Moscow State University, Moscow) *An appraisal of the man-made changes in terrestrial ecosystems at the global and continental levels*

**10.40 – 11.00** **Alexander S. Sheingauz** (Economic Research Institute FEB RAS, Khabarovsk) *Legal and Economic Approaches to Investigation of Global Change Problem*

**11.00 – 11.30** **Linda Stevenson** (Asia-Pacific Network for Global Change Research) *APN proposals and projects: an introduction*

**12.00 – 13.00** Lunch

**13.30 – 18.30** Small groups to discuss possible projects

**19.00 – 20.00** Night tour to downtown of Vladivostok

**20.00 – 21.30** Farewell party (Versailles Hotel)

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## Glossary of Terms

**APN** – Asia-Pacific Network for Global Change Research

**DPSIR** - Drivers-Pressures-State-Impact-Response

**FEB RAS NC for IGBP** – Far East Branch of the RAS National Committee for IGBP

**GLOBEC** – Global Ocean Ecosystem Dynamics (IGBP)

**IGBP** – International Geosphere-Biosphere Programme

**IHDP** – International Human Dimension Programme

**IMB FEB RAS** – Institute of Marine Biology, Far East Branch of the Russian Academy of Sciences

**LOICZ** – Land-Ocean Interactions in the Coastal Zone (IGBP)

**PAGES** – Past Global Changes (IGBP)

**RAS** – Russian Academy of Sciences

**RFE** – Russian Far East

**START** – Global Change System for Analysis, Research and Training

**TEACOM** – Temperate East Asia Regional Committee for START

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