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# Lessons Learned for Integrated River Basin Management

*Proceedings of International Symposium on Integrated  
River Basin Management*

By

**CCICED Task Force on Integrated River Basin Management**



**Co-Chairs: CHEN Yiyu   A.J.M.SMITS**  
**Editors: YU Xiubo   LI Lifeng   YAN Bangyou**

China Environmental Science Press

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# Preface

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Integrated River Basin Management (IRBM) is a process in which all sociological, economical and ecological interests of land use and water management are considered before a decision is taken how to use the natural resources of a river basin in a sustainable way. At present, IRBM prefers to develop ways of land and/or water use which no longer requires big interventions in the natural system (i.e. ecosystem based approach).

In order to promote and further tailor made the IRBM in China, the China Council of International Cooperation on Environment and Development (CCICED) launched a special Task Force on IRBM in March 2003, which was co-funded by WWF. In total, 13 experts from China, the Netherlands, Australia, Canada, Japan and other countries participated in IRBM Task Force. Approximately 25 consultants were hired by the IRBM Task Force to make specific contributions.

During their work the IRBM Task Force also organized the International Symposium on Integrated River Basin Management on November 9—10, 2003 in Nanchang, Jiangxi Province. The symposium was co-sponsored by the Jiangxi Mountain-River-Lake Office, WWF China and the Yangtze Valley Water Resource Protection Bureau. About 50 Chinese and International experts participated in the Symposium and 28 experts gave keynote speeches and presentations. The IRBM Task Force made a selection of the contributions which are published in the symposium proceedings.

The proceedings comprises five chapters focusing on specific aspects of IRBM: (1) Legislation and institutional arrangements; (2) Decision-making and public participation; (3) Economic drivers; (4) Innovative technologies and methodologies; the last and fifth chapter comprises the IRBM Task Force's report and its recommendations which were presented during the CCICED Annual General Meeting on 30 October, 2004 in Beijing.

The members of the IRBM Task Force are very pleased to see that, the IRBM concept and approaches, especially the ecosystem based approach, is becoming more popular and wildly accepted by governmental agencies, river basin organizations, NGO's and academic communities all over China.

We, the co-chairs of the IRBM Task Force, believe that the publication of the proceedings will help to promote IRBM and to restore China's living rivers. In addition, we would like to take this opportunity to express our gratitude to all people that have contributed to the activities of the IRBM Task Force. In particular we would like to thank WWF China and the GTZ for their financial support of this proceedings.



CHEN Yiyu



A.J.M. Smits

Co-chairs, "Integrated River Basin Management" Task Force, China Council for International Cooperation on Environment and Development

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# **Part I**

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## **Opening Addresses**





## Welcome Speech of Jiangxi Provincial Government

HUANG Zhiquan

*Governor of Jiangxi Province*<sup>①</sup>

It is a very important task for a region, a country or even for the entire global economic and social sustainable development to reinforce the integrated river basin management (IRBM). Government authorities at different levels in China have attached great importance to the IRBM and sustainable development. Ever since 1980s of last century, the central and local governments have constantly revised the laws and regulations on the IRBM, improved its institutions and bettered the technology for the IRBM, particularly in the fields of rational development of river basin resources, enhancement of river basin environment quality, improvement of the livelihoods of the residents along the river basin and promotion of sustainable development in the river basin, *etc.* where we have made marked achievements.

Recently, the Chinese Communist Party held its third plenary session of the sixteenth Party congress. At the meeting, the party is committed the policy of overall, coordinated and sustainable development and considers it a new development outlook. I believe that our IRBM will come to a new stage based on this new development outlook and China will make further and bigger contributions to the sustainable development of the global social economy.

Since the mid of 1980s, our Jiangxi Provincial Government has paid great attention to the IRBM. As early as 1985, we set sustainable development as our goal with science and technology as the precursors to boost development through openness. We integrated control and management of mountains, rivers and lakes with the alleviation of poverty, a project we named then the Mountain, River and Lake Project. The river is the Ganjiang River, which is the mother river that runs 600 km through Jiangxi from north to south and its drainage area makes up 80% of entire Jiangxi. The project is actually the most important one for the overall social and economic sustainable development of Jiangxi. Ever since the project in place, we have made great efforts in the fields of afforestation, water and soil conservation, sequential resource development,

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① All titles in this proceedings were that of 2003.

ecological protection, legislation for the IRBM and international exchange and cooperation.

What I would like to stress here is that our Mountain, River and Lake Project has got support from many of the central government institutions such as the Chinese Academy of Sciences, the State Environment Protection Agency, the Ministry of Water Resources, the State Commission of Development and Reform. A lot of international organizations like UNDP and European Union have supported the project as well. Many of the present participants from different countries have also given us a lot of help to our project. Nineteen years of the project execution have seen remarkable achievements in the control and management of mountains, rivers and lakes. For instance, we have successfully brought soil erosion well under control in the river basin. I would like to give you a figure here. 37% of the river basin was forest covered before and now the coverage has increased to 60%. In 1985, the population of poverty was nearly 3 million in the region and now it is 900 thousand less. Hence, the development of the Mountain, River and Lake Project in cooperation with poverty alleviation has helped greatly to mitigate poverty and let people live better.

The ecological environment in Jiangxi has also witnessed impressive improvement and the economic, social and ecological developments are well coordinated. As you all know that to develop a well-off society is a goal brought forward at the sixteenth congress of the Chinese Communist Party, Jiangxi is also striving to achieve the goal. In the course of reaching the goal, we need to further the Mountain, River and Lake Project as our key project.

It is not only the aspiration of Jiangxi but also the aspiration of China to reinforce the IRBM and promote sustainable development. I think it also the aspiration of the whole mankind. This calls for the cooperation of other countries in the world to forge ahead. The convening of this international IRBM seminar will serve as an impetus to China's basin science research, especially to the Mountain, River and Lake Project of Jiangxi. Jiangxi Province will grasp this opportunity to learn the advanced experience of other countries and adopt the advice of experts, professors and scholars. We will improve the Mountain, River and Lake Project and bring the provincial IRBM to a new stage and eventually contribute to the country's sustainable development.

## Address of CCICED Secretariat

XU Qinghua

*Deputy Secretary General of CCICED and director of International Cooperation  
Department of SEPA*

The Second Meeting of Phase III of CCICED has drawn to a very successful close. Premier Wen Jiabao met with the council members and task force leaders. He expounded a new outlook on the overall coordinated sustainable development in his speech and hoped that CCICED could stick to its path and work for the better. Mr. ZENG Peiyan, vice premier and chairman of CCICED, also participated in the meeting and delivered an important speech. He spoke highly of the work by CCICED and gave his explicit expectations and requirements on the future work of CCICED. The meeting focused on the deliberation of how to transform the economic development pattern, choose a new industrial path and reach the goal of developing a fairly well-off society. During the three-day meeting, Chairman of the UN Sustainable Development Committee and the Party Secretary of Jiangxi Province as well as executive director of UNEP made key speeches respectively. The participants put forward many constructive ideas and proposals with the focus on the issues of enterprise development and environment, energy strategy and related technologies, development of environmental protection industry, cycling economy and the mechanism of clean strategy. The meeting has formulated proposals to the Chinese government.

There are few IRBM cases of success in China. Since the IRBM is still weak in China, various environmental issues have occurred in rivers and the environmental effects of river basins have become more serious. With the growth of social economy and improvement of people's awareness, it has been recognized that the IRBM should be strengthened, and relevant laws and regulations as well as operation modes and management systems be improved to make the IRBM more effective.

The task force of the IRBM will focus its attention on the research of the issues existing in the IRBM and provide advice and policies in order to promote legislations of the IRBM, develop the mechanism of management and information sharing and improve the river basin management level by applying the IRBM related new technologies, ideas and methods. Hence, the IRBM is one of the most important research topics of CCICED. The representatives to the meeting consist

of domestic and international experts and this composition provides a good opportunity for the IRBM international cooperation. I believe that the meeting will give us the latest information and trends in the world IRBM development, serve to promote understanding and friendship for the experts and lay a sound foundation for the IRBM research.

The task force of the IRBM shall submit its work report to the annual meeting of CCICED next year, namely in 2004. We hope that the international and domestic experts of the task force will further their research, work hard in line with the requirements of CCICED and strive to produce high-quality research reports and policy advice.

## Address of WWF China

James Harkness

*Chief Representative, WWF China*

This is the third time that I have been in Jiangxi Province. My last visit was fifteen years ago when I was here to do a research on the white crane in the Poyang Lake nature reserve. I lived in a farmer's house by the lake for a period of one month. The village situated in the reserve was called "Bianshan". All the villagers had "Xiong" as their surname and the owner of the house that I lived in was called XIONG Zhenguo. Though interesting as the research was, the deepest impression left in my mind was the relationship between the people living by the Poyang Lake and the nature itself, namely, the closeness between human beings and the nature. I have been to many places of China for the past fifteen years and got involved in a variety of nature conservation work of the country. I found that the balance between the nature and human beings has disappeared in many places where wetlands are over reclaimed and developed. The lost balance is detrimental to the nature and eventually will impair the life of human beings and directly affect the social development.

Meanwhile, in some places including The Netherlands, the mountains, rivers and lakes of Jiangxi, people have used and explored some new methods to try to readjust the balance between the nature and human beings.

Today's meeting is the continuation of studying or promoting one of the patterns, namely the IRBM. Apart from the present domestic experts, we also have the pleasure of some well-known IRBM experts and representatives from international organizations. I think it is a very good opportunity for the experience exchange among different countries. I think the Mountain, River and Lake Project is an outstandingly successful IRBM pattern of all. As a nature conservation organization, we believe, through the IRBM, we could reach to the state as the traditional Chinese ideal depicts of man and nature integrated as a whole on the premise of social development.

## Address of Selected Organization

RENE ANDERSEN

*Project Officer, the European Union to China*

The topic of today's seminar is on the IRBM which is a very important work for both China and the EU. The EU's China IRBM task force has attached great importance to it and the Chinese government has put it on its agenda. It is all the same in Europe. We take the IRBM very seriously in terms of the quality and quantity. We are very serious about the IRBM in many domestic and international areas. We have the IRBM on our agenda in the EU. In the year of 2000, we had a regulation on the IRBM passed and the EU members should take their own initiatives to well manage river basins in their own countries. We ask member countries to formulate effective management plans for each basin including cross-border basins and constantly revise those plans. By so doing, we have a very good cooperation and coordination framework so that we are able to manage every river basin effectively and successfully.

The EU and the Chinese government have agreed to forge further international cooperation in the IRBM and planning. We aim to have a project to promote scientific integrated management of China's river basin. The project will involve the middle and lower reaches of the Yellow River and the Yangtze River. The project development requires active participation of provinces and cities along the two river basins. The Ministry of Water Resources and the State Environment Protection Agency will take the lead to carry out the project with the support from other ministries and commissions. Our project will serve as a good platform for the exchange and cooperation between China and the EU. We will also try to learn the successful experience from the laws and mandates on water management just issued by the EU. We have already set up an office in Nanchang. We will discuss about the development of the project related to the Yangtze and Yellow River basins next time. I think we are not only trying to get the existing partners involved, but also those new participants.



## Welcome Speech of IRBM Task Force

CHEN Yiyu

*Co-Chair, IRBM Task Force, CCICED  
Academician of China Academy of Sciences*

On behalf of the task force and Prof. Toine Smits, I would like to give you an introduction on the work progress of the task force. The EU representative has expressed the interest in promoting China's IRBM in his address and would like to support the elimination of barriers between different departments and regions and the development of the IRBM framework. It can be said that it is a long term goal for us to accomplish the IRBM in China. I would like to take this opportunity to brief you about our progress of this CCICED task force. Mr. Xu Qinghua, deputy secretary general of CCICED has given an introduction of the overall goals of CCICED just now.

The IRBM task force got started in March this year and established its main work framework through discussion. We convened the second work meeting of the task force in June in Beijing. At the meeting, we discussed and established our work in five demonstration areas. In September, we had a work meeting in The Netherlands and a field work trip to the Rhine in The Netherlands and France. Especially when we visited the demonstration project called "Giving rooms for rivers" in The Netherlands, we had a chance to hear about the introduction of the EU water framework report. It was at this meeting that we decided to further conduct our research in four areas, namely the legal system of the river basin management, the economic methods for the river basin management, the decision-making mechanism and public involvement in the river basin management and the new methods and concepts in the river basin management.

As you all know, the river basin management in our country is involved of environment and water resource management departments at the central level and economic and social departments at the local level. The Ministry of Water Resources is responsible for planning and distribution of water resources of river basins and construction and maintenance of water power facilities. The State Environment Protection Agency takes care of water quality monitoring while the local governments only cares about the economic growth in the river basins. Hence, the river basin is not managed as a whole on an integrated basis because the river basin

management is cut up by different departments and local governments. So it is very difficult to get the social, economic and ecological benefits integrated and maximize them as it is also the maximization of welfares in the river basin. If so, it is inevitable to see problems pop up including ecological outcomes or difficulties in assuring the people living in the river basin of an incessant growth of the economic income while stressing on the ecological environmental protection and construction.

It is a very good IRBM case study of our country if we consider the active practice of Jiangxi's Mountain, River and Lake project and the integration of social, economic and ecological benefits of the river basin. Our task force will learn modestly and sum up the experience as well as lessons of the Mountain, River and Lake Project and provide applicable policies and proposals to the government through CCICED on the basis of Jiangxi's experience.

Under the improving conditions of the market economy, it is necessary to maximize the welfares of the river basin by fully capitalizing on the economic means in the river basin management and motivating the initiatives of different parties in the IRBM so that they would effectively participate in it. China has developed a lot of economic means in the river basin management, the economic means in the water resource distribution of the Yellow River basin for instance. However, it is still far from sufficient in China's river basin management and requires further research on market control mechanisms of particular characteristics in different basins. Corresponding economic means is one of the important issues for our task force.

While developing economic means for benefits, it is also necessary to motivate the interest of the stakeholders of the river basin management, the public interest in particular. The cry for public involvement in sustainable development has been on the rise in the international community. Hence, it has become a hot spot of international and domestic attention in studying effective participation of the public and decision making process in sustainable development. With the increase of public awareness on environment, participation, fairness and decision making, it has become an important issue for the IRBM decision making mechanism on how to create an environment for the public involvement in the IRBM. The world summit meeting on sustainable development in South Africa last year appealed again to all the countries for the creation of a mechanism for the public involvement and decision making in sustainable development so that the public could take up their responsibilities and obligations in the course of decision making for sustainable development in order to establish a participatory mechanism. The IRBM needs public involvement and the public has the right to know the environment situation of the living rivers their livelihoods depend on. The task force will proactively conduct researches on the mechanism and modes of how the public could get involved in the IRBM so that the public can get good involvement in it.