

CHANGJIANG

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长江水利 国际合作 与项目管理

杨正波 管 晶 等 编著
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内 容 提 要

本书系统地介绍了长江水利国际合作与项目管理的历程,以及为实施“维护健康长江,促进人水和谐”治江新理念相关的一些初步经验。书中写到的长江三峡工程从提出到兴建近一个世纪的国际合作精义要点,实乃我国及全世界水工程建设的宝典。

书中实例脉络清晰,法理证据凿实,合作效果凸显。本书可供从事水利和农业、工业、林业、能源等领域国际合作的领导、官员和大专院校相关专业的师生参考。

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Abstract

This book, which systematically introduces the history of international cooperations and projects management in Changjiang Conservancy, shows us some primary experience on the implement of the new river management idea that is "to maintain a healthy Yangtze, promoting the harmony between human and men". It involves key points of a-century-long international cooperations on TGP from the proposal to construction, which is indeed a both nationwide and worldwide treasured book for water projects construction.

This book presents ideas clearly and logically, contains abundant trustable cases, and makes the cooperative effects distinct. Therefore, it is suitable for leaders and officers involved in international cooperations in the field of water conservancy, agriculture, industry, forestry, and energy, etc. , as well as teachers and students of colleges in relevant majors.

序

“无边落木萧萧下，不尽长江滚滚来”，这是杜甫心目中的长江；“大江东去，浪淘尽，千古风流人物”，这是苏轼憧憬中的长江。

李白在其《黄鹤楼送孟浩然之广陵》中，以“孤帆远影碧空尽，唯见长江天际流”，勾勒出“地球村”里人际交往的心灵图画，惟妙惟肖，情真意切。

溯古观今，长江历史源远流长。

最早，为距今两亿年前三叠纪时的“古长江”；次之，是距今 1.4 亿年前由侏罗纪燕山运动形成的“今长江”。古今长江亿年地质史与中华民族五千年文化史比较，数学上称前者可谓无穷大，称后者则谓无穷小。然而，就在这“无穷小”的时段里，掀开近代长江国际交流合作一页的，以 1932 年美国史笃培参与长江上游水力发电勘测为标志。

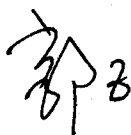
1932~2007 年，3/4 个世纪，水利部长江水利委员会（以下简称长江委），作为“长江代言人”，经历了一个从“工程水利”到“现代水利”的转变；治江理念也经历了由“标本兼治”到“维护健康长江”、“在开发中保护，在保护中开发”的以人为本、与时俱进的创新过程。

《长江水利国际合作与项目管理》一书，正是 75 年来尤其是 1985~2005 年这 21 年来的新治江理念在国际合作与科技交流测度的缩影。这里，不乏留下长江代言人的考察、咨询、论说、辨证，也寄托了长江代言人“洁水净流

水资源”、“倒影生辉水工程”的希望。

从长江代言人与 70 多个国家交流的回放，到 30 多个国家亲临其境的感受回味，以及与 10 多个国家签署合作协议的评审，这样的往事不尽让当今的长江代言人颌首微笑，更让后来者心荡神驰。读《长江水利国际合作与项目管理》这样一本书，是一段幸福的回忆旅程。

长江水利委员会国际合作与科技局局长

A handwritten signature in black ink, appearing to be '高志' (Gao Zhi), written in a cursive style.

2007 年 12 月 17 日 武汉

Foreword

"In the boundless forest, falling leaves swirl and twirl all around; On the endless Yangtze, rolling waves crash and splash all along." is the Changjiang in poet Dufu's mind; "The endless river eastward flows; with its huge waves are gone all those gallant heroes of bygone years." is the Changjiang in the eyes of poet Sushi.

In the poem "Seeing Meng Haoran off at the Yellow Crane Tower", with the image "On the territorial line of the azure sky disappears the distant image of the lonely sail, can only see the rolling changjiang going to heaven", Li Bai outlined a vivid heart-felt map of interpersonal communications in the global village, full of true love and genuine concern.

Looking back, Changjiang has run a long course from the remote source.

The history of Changjiang can be divided into two parts. The first dates back to Triassic Period of 200 million years ago when Changjiang is called "Ancient Changjiang". The second part, when Changjiang is called "Modern Changjiang", is 140 million years away. To compare Hundreds of millions of years long geological history between the two parts to the 5, 000-year cultural history of Chinese nationality. In the terms of mathematics, the former is called infinity while the latter named infinitesimal. However, in this infinitesimal period, it is not until when American G. G. Storebe joined in the sur-

veying team for upper Changjiang hydro-power in 1932 that international cooperations on Changjiang stepped into a new era.

From 1932 to 2007, nearly three quarters of a century, as the spokesman of Changjiang, Changjiang Water Resources Commission (abbreviated as CWRC below) experienced a change from engineering water conservancy to modern water conservancy. Besides, the guideline of managing Changjiang, which keeps pace with times, has shifted from “seeking both temporary and permanent solutions” to human-oriented ones, such as “maintaining healthy Changjiang” and “to develop water resources in the process of preservation, and to preserve in the process of development”.

“International Cooperations and Programmes Management for Changjiang Water Conservancy” is the new guidelines’ miniature in the field of international cooperation and science and technology exchanges in the past 75 years, especially the 20 years during 1985 and 2005. This book not only involves CWRC staff’s study tour reports, consultations, and arguments but also contains their best wishes.

This book playbacks CWRC’s communications and exchanges with 70 plus nations, ruminates over the authentic feeling towards 30 plus countries, and reviews the moments of signing cooperative agreements with 10 plus nationalities. These memories encourage the elder CWRC generations and attract the coming. Reading through the book triggers a pleasant voyage of memory.

Prof. Yu GUO

Director General

Bureau of International Cooperation, Science and Technology, CWRC

Wuhan, Dec. 17th, 2007

前 言

长江以其干流全长 6300km 位居世界第三长河流，干流流经 11 个省、自治区、直辖市，流域面积 180 万 km^2 ，占全国近 1/5 的国土面积，养育了 4.5 亿人，占全国人口的 1/3。2005 年，全流域 GDP 达 73816.7 亿元，约占全国经济总量的 40.3%；已建水库 4.57 万座，总库容 2200 亿 m^3 ，其中大型水库 151 座，库容 1620 亿 m^3 ，中型水库 1111 座，库容为 287 亿 m^3 ；建成地表水蓄、引、提调水工程设施约 522 万座（处），设计供水能力总计 2049 亿 m^3 ，实际供水能力 2050 亿 m^3 。

进入 21 世纪以来，长江作为国家“西部大开发，中部崛起，东部腾飞”战略实施阶段连接东、中、西部的纽带，在“坚持科学发展观”、“构建和谐社会”以及“五个统筹”等大政方针要求下，新时代的长江流域保护与发展正面临着新的挑战：沿江地区大规模开发、人口集聚对生态环境压力增加；重大工程建设的累积影响日益显现；流域管理、区域管理及行业管理协调的难度加深，一一摆在长江代言人——水利部长江水利委员会（以下简称长江委）的面前。

长江的保护与发展，始终贯穿于长江代言人一代传一代的工作中。但是，真正认识到“在保护中促进发展，在发展中落实保护”，以求流域在环境、社会与经济增长中的可持续发展，还是 20 世纪 90 年代以后的事。长江代言人和“地球村”里的其他人一样，对可持续发展的认识是通过著作、国际性会议及其文件逐步提升的。其认识过程见下表。

长江代言人对可持续发展的认识过程

序号	年份	著作、国际性会议及其文件的问世与关注
1	1962	(美) R·卡逊著《寂静的春天》
2	1972	(英) 巴巴拉·沃德著《只有一个地球》
3	1972	(美) D.L. 米都斯等著《增长的极限》
4	1972	联合国人类环境会议《斯德哥尔摩人类环境宣言》、《斯德哥尔摩行动计划》
5	1980	世界自然资源保护大纲
6	1982	联合国人类环境特别会议《内罗毕宣言》
7	1987	世界环境与发展委员会报告：《我们共同的未来》
8	1992	联合国环境与发展委员会（全球环境首脑会议）《里约热内卢宣言》
9	1992	《21 世纪议程》、《气候变化框架公约》、《生物多样性公约》、《森林原则声明》
10	2000	21 世纪水世界委员会报告《世界水展望——一个水安全的世界》《21 世纪水安全海牙部长会议宣言》
11	2002	联合国环境与发展大会《约翰内斯堡宣言》

在此基础上，2005 年，由水利部与国家环境保护总局等 27 家国内外单位发起的“长江保护与发展论坛”在武汉正式启动，并通过了《长江保护与发展宣言》。第二届论坛于 2007 年在长沙召开，并发布了保护洞庭湖行动纲领——《第二届长江论坛长沙宣言》，在此同时，配合联合国“国际水十年（2005~2015 年）”，举办“长江周”等活动，提高了公众保护长江的意识，《长江论坛》开始并逐步发展完善成为国际合作维护健康长江的重要标志。

《长江水利国际合作与项目管理》一书，是“维护健康长江，促进人水和谐”理念到行动的一个重要组成部分，它从国际视野——“长江是中国的，也是世界的”角度，调首回

眸过去 75 年尤其是近 20 余年长江国际合作的历史，以及国际项目管理的主要经验。其中包括上篇：长江水利的国际合作——中美、中苏、中俄、中加、中意、中瑞（士）、中法、中日、中芬、中澳（澳大利亚）、中荷、中丹（麦）、中国与欧盟、中国与世行、中国与亚行等的合作；下篇：长江水利的国际合作项目——长江及当今世界最大的防洪大规模项目、荆江大堤钢板桩防渗项目、汉江中下游洪水预警系统装备项目、中澳（澳大利亚）长江防洪与管理项目、云贵鄂渝水土保持项目、长江洪水预报项目、长江中游暴雨洪水预报项目等。

《长江水利国际合作与项目管理》一书采取集体讨论、分工合作的方式进行编著。全书共 14 章，由杨正波、管晶、杜小鹏、周竹林和陈彦生共同撰写。其中，杨正波执笔撰写前言、第 1 章、第 2 章、第 4 章和第 6 章；管晶执笔撰写第 7~10 章；杜小鹏执笔撰写第 5 章、第 11 章、第 12 章；周竹林执笔撰写第 3 章、第 13 章、第 14 章；陈彦生参加了部分章节的撰写。全书由杨正波、管晶策划，陈彦生统稿。

本书内容提要、序、前言和目录的英文由邬全丰翻译。

在编著中，得到长江委国际合作与科技局领导和同仁的指导与帮助；局长郭玉教授为本书写序；前局长、原全球水伙伴（中国）技术顾问委员会执行主席杨国炜教授审阅了书稿；哈妮、孙键、池姗、夏颖等做了大量编务工作，在此一并表示感谢。

鉴于编著者水平，书中难免有欠妥与失误之处，恳请读者不吝斧正。

编著者

2007 年 8 月于武汉

Preface

Changjiang, with the drainage area of 1.8 million km², is known as the third longest river in the world. With the mainstream running across 11 provinces, autonomous regions. It fosters 450 million people which account for 1/3 of the total national population, with only 20 percent of the total territorial land area. In 2005, the GDP of the Changjiang river basin contributed a GDP of 7.38167 trillion CNY, 40.3 percent of the nation's total economic amount. Throughout the river basin, 45,700 reservoirs with a total capacity of 220 billion cubic meters, have been built, among which there are 151 large reservoirs with a capacity of 162 billion cubic meters and 1,111 medium-size reservoirs with a capacity of 28.7 billion m³. Besides, there are 5.22 million structures for storing, diverting and pumping water, with a designed water-supply capability of 204.9 billion m³. Actually, these 5.22 million structures can supply 205 billion m³ at large.

Having stepped into 21st century, the strategy that is to greatly developing the west, grow up the middle and further boost the east, is being rightly implemented. Changjiang is a link connecting China's east, middle and west. Under the policies such as insisting on the scientific development concept, building harmonious society and "five integrations", etc, the preservation and development of Changjiang is facing new challenges. The large scale development and population con-

centration in the regions along the river have increased the pressure on the ecological environment. Accumulated impact of the constructions of large structures is coming into effect. Besides, it is more difficult for coordinations in river basin management, regional management and industrial management. All these challenges have are confronting the spokesman of Changjiang-CWRC.

Changjiang's preservation and development have been on the spokesman's agenda from one generation to another. However, it was not realized that for the sustainable environmental, social and economic development Changjiang needs to be developed in the process of preservation and protected in the process of development until 1990s'. Like others in the global village, the spokesman's knowledge on the sustainable development is gradually improved through relevant works, international conferences and its documents. As follows:

Improvement of the knowledge to sustainable development

NO.	Year	Works, international conferences and relative documents
1	1962	"Silent Spring" by R • Carson (US)
2	1972	"Only One Earth" by Barbara Ward (UK)
3	1972	"Limits to Growth" by Donella H. Meadows (US)
4	1972	"Stockholm Declaration on the Human Environment" and "Stockholm Action Plan" at the United Nations Conference on the Human Environment
5	1980	"World Conservation Strategy"
6	1982	"Nairobi Declaration" at United Nations Conference on Human Environment
7	1987	"Our Common Future" by World Commission on Environment and Development

Continue

NO.	Year	Works, international conferences and relative documents
8	1992	"Rio Declaration" at United Nations Conference on Environment and Development
9	1992	"Agenda 21", "United Nations Framework Convention on Climate Change", "Convention on Biological Diversity", "Statement of Principles on Forests"
10	2000	Report by World Water Council for the 21 st century "A Water Secure Future: Vision for Water, Life and Environment" "Ministerial Declaration of the Hague on Water Security in the 21 st Century"
11	2002	"Johannesburg Declaration" at United Nations Conference on Environment and Development

Based on the above, in 2005, initiated by 27 domestic and overseas sectors such as MWR and SEPA, "Forum on Changjiang's preservation and development" was officially launched in Wuhan, and "Declaration of Changjiang's preservation and development" was approved on this forum. The 2nd forum was started in Changsha in 2007, when the programme for the protection on Dongting Lake, named "Changsha Proclamation for the 2nd Yangtze Forum", was issued. Meanwhile, to cooperate with "Ten Years of International Water (2005 — 2015)", activities such as "Changjiang Week" were held. In that way, the public awareness on protecting Changjiang has been improved. Yangtze Forum starts and is now gradually becoming an important mark of international cooperations on maintaining a healthy Yangtze.

"International Cooperations and Programmes Management for Changjiang Water Conservancy" is an important part of both concept and action of maintaining healthy Changjiang and promoting human-water harmony. With an international perspective

that is Changjiang belongs to not only China but also the entire world, the book reviews the history of international cooperations on Changjiang in the past 75 years, especially the last 20 plus years, and picks up the major experience of the international programmes management. This book comprises two parts. The first is about international cooperations on Changjiang Conservancy, including cooperations with US, USSR, Russia, Canada, Italy, Switzerland, France, Japan, Finland, Australia, Holland, Denmark, EU, World Bank, Asian Development Bank. The second part is about international cooperations programmes for Changjiang conservancy. These programmes include Changjiang and world's largest flood control programme, Jingjiang levee steel plates and columns seepage control programme, middle and lower Hanjiang flood early warning system equipment programme, Sino-Australia Changjiang flood control and management programme, Changjiang/Pearl Watershed Rehabilitation Project, Changjiang flood forecast programme and middle Changjiang storms and flood early warning programme, etc.

“International Cooperations and Programmes Management for Changjiang Water Conservancy” is compiled through group discussion and coordination. The book consists of 14 chapters, finished by Yang Zhengbo, Guan Jing, Du Xiaopeng, Zhou Zhulin and Chen Yansheng, among which Yang Zhengbo wrote the introduction, the 1st, 2nd, 4th and 6th chapters, Guan Jing completed chapters from 7th to 10th, Du Xiaopeng wrote the 5th, 11th and 12th chapters, Zhou Zhulin finished the 3rd, 13th and 14th chapters, and Chen Yansheng took part in writing partial chapters. Yang Zhengbo and Guan Jing were planners of the book, Chen Yansheng was the organizer of the book.

The abstract, preface, introduction and contents of this book were translated by Wu Quanfeng.

During the composing period, we got lots of guidance and helps from the cadres and colleagues of the Bureau of International Cooperation, Science and Technology. The director general, Professor Guo Yu wrote the preface for the book. The former director general and former executive chairman with Technical Advisory Committee of Global Water Partnership (China), Professor Yang Guowei reviewed the draft. Besides, Ha Ni, Sun Jian and Chi Shan did much editorial work. Hereby, thanks are granted to them all.

Due to the limited ability of composers, there are inevitably something wrong and unreasonable. We appreciate your valuable comments or criticisms.

Composers
Wuhan, August, 2007

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