



The “Last Report” On China’s Rivers

Executive Summary

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First Bend of the Yangtze River

FOREWORD

In January 2013, the third year of China's Twelfth Five-Year Plan, the State Council released its 12th Five-Year Plan for Energy Development¹, which included targets that aim to shift China's energy mix to one that pollutes less yet still fuels the country's growing energy needs. Specifically, by 2015 the Plan proposes to:

- Increase the proportion of non-fossil fuels in overall primary energy use to 11.4 percent;
- Raise the share of installed generating capacity from non-fossil fuels to 30 percent;
- Increase the percentage of natural gas in primary energy to 7.5%;

- Reduce coal consumption as a percentage of primary energy to below 65% by 2017; and,
- Construct 160 GW of hydropower capacity and to raise nationwide hydropower capacity to 290 GW.

If the Plan's hydropower targets are to be met, by 2015, nationwide conventional hydropower installed capacity will reach 48% of the technically exploitable hydropower potential, and 72% of the economically recoverable potential.

To reach these hydropower development goals, the 12th Five-Year Plan prioritized the construction of 50 plus large-scale hydropower plants on the Jinsha, Ya-

¹ The State Council, "12th Five-Year Plan for Energy Development," http://www.gov.cn/zwgk/2013-01/23/content_2318554.htm.

long, Dadu, Lancang (Mekong) and Yarlung Tsangpo (Bramaputra) rivers, as well as on the upstream of the Yellow. Furthermore, more than 10 dams are to under go feasibility studies and to be constructed shortly. These dams include those which environmental organizations have monitored or been involved in campaigns to oppose, including:

- Dams on the Jinsha River, whose construction was terminated by the Ministry of Environment Protection (MEP) during what was later dubbed an “EIA storm.” This was the very first time MEP terminated a vast number of projects under construction based on the Environmental Impact Assessment Law.
- Dams on the Lancang River, which started construction without government approval;
- Yangqu Dam on the Yellow River, which threatened endangered plant species;
- Dams planned on China’s only two remaining free-flowing rivers, the Yarlung Tsangpo and the Nu; and,
- Xiaonanhai Dam, whose construction forced the re-drawing of the Upper Yangtze Rare and Endemic Fish National Nature Reserve.

The list of proposed dams was truly a wake-up call for Chinese environmental groups, many of whom believe such a dam expansion will turn China’s rivers into a series of reservoirs. Action is needed to prevent the loss of these rivers and their surrounding ecosystems.

In light of these concerns, several Chinese environmental NGOs that are engaged in river and watershed protection partnered with independent researchers to collect data and analyze the status and challenges facing China’s rivers. During the research, we collected primary source documents and on-the-ground experience from Chinese environmental NGOs —especially on issues regarding information transparency, public participation mechanisms and accountability in hydropower decision-making.

The research and writing of this report coincided with the Third Plenary Session of the Chinese Communist Party’s eighteenth National Assembly. And in November 2013, we were invited to two internal consultation meetings on Yangtze River Basin’s planning and management, held by the National Development and Reform Commission’s Energy Research Institute. These meetings provided us with valuable insights into the new Administration’s efforts to balance basin

development and conservation. We left the meetings with new ideas and more optimism on better water governance in China.

The health of China’s people and economy is tightly linked to the health of the country’s rivers. We hope this report will help stimulate new efforts and dialogues on balancing river development and conservation, new institutions enforcing public participation, new emphasis on implementing “ecological redlines.” We also hope to ensure that the pursuit of renewable energy and pressures to reduce greenhouse gas emissions does not sacrifice the multiple values of rivers.

We are indebted to the individuals and organizations in the public, private and civil society sectors who granted us interviews, and provided us valuable advice, data and feedback. Much of this report is based on environmental NGOs campaigns over the past ten-plus years, and admittedly much of our efforts to access information regarding energy planning, river data, and water policy was plagued difficulty. We apologize for any gaps in information and errors in the content and graphics due to our limited capacity. These mistakes, as well as the statements, do not represent the position of the participating organizations.

This report aims to generate dialogue and debate. We welcome criticism and subsequent discussion of the issues raised in the report. Please direct any questions and feedback to: chinariversreport@gmail.com.



The meandering Jinsha River

EXECUTIVE SUMMARY

China has become the world's largest carbon emitter and has committed itself to emissions reductions. At the 2009 Copenhagen Climate Conference, the Chinese government promised by 2020 to lower China's carbon intensity by 40 to 45 percent from 2005 levels, and use non-fossil fuels for 15% of its energy. These energy conservation and emission reduction goals were not only catalyzed by the need for internal economic restructuring to address growing air pollution problems, but also because of pressure from the international community.

Despite the ambitious carbon reduction goals, China's economic growth rate has not slowed and total energy consumption has continued to increase. Renewable energy development, while rapid, has not

kept up with growing energy demand, so coal use and carbon emissions are increasing. Thus, hydropower has become the "panacea" in China's changing the energy structure. Coal still reigns, but notably in the 12th Five-Year Plan hydropower is moving to center stage. The Fukushima nuclear meltdown in Japan slowed down the national nuclear program and the calls for hydropower grew even louder. The most ambitious advocates for hydropower in China have suggested that up to 85% or even 90% of the hydropower potential should be exploited, rather than the government's current target of 60% of the total hydropower potential.

The solutions to solve China's energy, pollution and greenhouse gas emission challenges have been

cast as a set of two choices to weigh. On one side are energy production, emission reductions, and rapid containment of air pollution—clearly very urgent short-term priorities. On the other side are questions of restoring and creating better governance mechanisms to solve China's water crises and maintain healthy river ecosystems—long-term goals in China's overall sustainable development. It is admittedly difficult to weigh the pros and cons of hydropower development and river protection. Nevertheless, the sobering question is whether the density and speed of current hydropower dam construction will bring unexpected, irreversible and unbearable consequences to the ecological, social and economic development of the country.

The history of river protection giving way to dam construction is long. Beginning from the early dams on the Lancang River that lacked social and environmental impact assessments, to public opposition to the thirteen-cascade development on the free-flowing Nu River, to the back and forth debate on the Jinsha River's 8 dam cascade development, and finally the Xiaonanhai Dam construction that led to a redrawing of the Upper Yangtze Rare and Endemic Fish National Nature Reserve. For over ten years in the face of this dam building, Chinese grassroots environmental groups have been seeking opportunities to participate, express concerns, and help promote the ecological protection of China's rivers.

The NGOs that have weathered these controversies point out repeatedly the questionable dam approval process, the enormous ecological and social issues associated with dam building, and the risks of building dams on China's southwest earthquake zone. These insights and historical lessons gained by the NGOs have not yet been fully reflected in improvements in decision making and hydropower continues to march forward under the banner of clean energy.

China's rivers cannot wait!

The number of rivers free of dams is dropping dramatically. Moreover, in China's southwest, the pollution and water diversions caused by expanding cities and industrial parks threaten many rivers. If the short-term demand for electricity production and emission reduction expands dam building in this region this will compromise the health of rivers that provide multiple ecological values. Further damaging already vul-

nerable water ecosystems compromises our future generations.

This report is a collective response from Chinese environmental NGOs to the 12th Five-Year Plan for Energy Development, with a specific focus on hydropower development. We hope that national energy policymaking could give full consideration to water ecosystems and to the protection of river system's multiple values. We urge the national energy, water, and environmental protection departments to address and respond to our concerns in the remaining of the 12th Five-Year Plan period, and during the development of the 13th Five-Year Plan. We ask them to truly strike a balance between development and conservation and prescribe policies that will lead to an ecological civilization and a beautiful China.

PROTECTING RIVERS' BENEFITS

Rivers, by definition, flow. The **first chapter** of the report elaborates the ecological, cultural and economic value of rivers that would be sacrificed when that flow is obstructed by dams. Healthy river systems also have a crucial significance for climate adaptation. Rivers are ancient complex ecosystems, the value of these systems and the resources they provide are much more than mere power generation. Rivers maintain the health of the ecosystems and as they shaped ancient civilizations in the past today they provide services that support the whole economy.

River protection and river exploitation fundamentally differ in their appreciation of the river systems. Seeing rivers as predominantly serving power generation is an outdated concept. The negative impact of dam construction and hydropower generation is recognized and documented internationally. Overemphasizing hydropower can only lead us to greater water crisis.

HEALING RIVERS

Over the past decade, China's environmental NGOs have undertaken many direct actions and pointed out many lessons from past hydropower projects. Thanks to much discussion on the problems brought about by ill-managed hydropower development, China's administration took a cautious approach vis-à-vis hydropower expansion, balancing and studying carefully the complex relationship between hydropower

and ecology. The then Prime Minister Wen Jiabao postponed the dam constructions on the Nu and the Jinsha repeatedly, requesting further study and discussion.

The **second chapter** of the report highlights five negative impacts and lessons from past hydropower development:

(1) The lack of institutional structure in the hydropower decision making and approval process, especially in three areas:

a. Outdated and powerless approval process: In recent years, integrated river basin planning and the environmental impact assessment (EIA) almost always take place after the construction of individual dams. The approval process clearly has failed to guide and manage the “dam rush,” and existing regulations are either outdated or powerless in constraining individual projects.

b. Ignored public participation channel: The government has failed to appreciate the value, channel, and find ways for public participation. As a result, the opinions from environment groups and the general public have been significantly marginalized during hydropower decision-making. EIAs of the controversial projects were oversimplified, and the requests for public hearings go ignored.

c. Construction before approval: Currently the law permits significant site preparations to commence before final project approval is given. Often since the construction has begun, government agencies have no other choice but to approve the projects. For example, on the Jinsha River, public participation was not allowed during the EIA approval process for seven of the eight cascade dams. In some of these projects the approving agency deemed it too late for public opinion to influence the projects because site preparation was so advanced. In 2005, the Xiluodu and Xiangjiaba dams on the downstream of Jinsha River were also constructed before the final approval was given.

(2) The proper placement for resettled communities has plagued the hydropower sector for a long time. Displaced populations often received minimum to no compensation from hydropower developers. Furthermore, developers often intimidate, threaten, or violate

the civil rights during the relocation and resettlement process, fueling the resettled community's resentment towards the government and society.

According to the 12th Five-Year Plan and other long-term plans, hydropower development will further move toward upstream and into western hinterland areas that are mostly populated by ethnic minorities. The pressure of maintaining ethnic stability in the face of hydropower development will certainly make resettlement work more difficult. Minority groups' culture and livelihood are inextricably linked with the collective ownership and use of natural resources, and are protected by the Constitution and the Law on Regional National Autonomy. However, migrants are only compensated on their individual property rights. The difference between collectivism and individualism not only brings misunderstandings and cultural conflicts, but also causes significant financial losses to the displaced communities. New settlements are also facing serious challenges in providing assistance to migrants' psychological aid, career development, educational opportunity, retirement life, cultural heritage, and social capital reconstruction.

(3) River ecosystems have been seriously damaged. Dams alter the natural flow of rivers, resulting in the reduction and extinction of rare fish species. Upstream hydropower development dries up rivers and lakes in the downstream, Dongting Lake and Poyang Lake being the most shocking examples in China. Dams in the southwest regions inundate fertile valley land, and compromise self-purification capacity of rivers, which causes serious pollution in reservoirs. The cumulative effect of cascade dams can cause ecological losses and dry up rivers, which ultimately will affect human beings at the top of the food chain.

Moreover, the ecological remedy measures designed to decrease dams' impact have failed repeatedly. The dams on Jinsha River and Shuiluo River, as well as Xiaonanhai Dam have significantly compromised river ecosystems. The damage is not just caused by construction of the dams, but also by mismanagement and irrational decision-making linked to ignoring existing laws to protect rivers.

For example, in the middle reaches of the Jinsha River, the Ahai and Liyuan dams propose to “maintain” rare fish habitats on the Shuiluo River, an immediate tributary. In reality, however, a cascade

of eleven dams is being built simultaneously on the Shuiluo River, alongside uncontrolled gold mining on the river. The damming of tributaries does not leave any “eco-leeway” for mainstream dams. The same situation is also facing the Nu River.

The worse case of a river ecosystem being compromised is the dam “invasion” into the Upper Yangtze Rare and Endemic Fish National Nature Reserve, an area marked by the central government’s “ecological red lines” that are not to be crossed. In 2005 and 2010, the reserve area was re-drawn to make way to Xiangjiaba, Xiluodu, and Xiaonanhai dams. The fish sanctuary was specifically designed to mitigate the impact of the Three Gorges Dam and now only remains on paper.

(4) The earthquake risk in southwest China cannot be ignored. Southwest China is a seismic active region with high-risks. The region’s particular geological structure, poor geological environment, and frequent earthquakes have resulted in land subsidence, river diversions and landslides. Some Chinese researchers believe dams are both the trigger and the victim of these quakes. What is more frightening, cascade dams are likely to cause chain reactions and expand the impact of any earthquake. Though the geological risks facing southwest dams are still being debated, we should allow different views and make mid- to long-term earthquake predictions public to inform decision-making, and carefully weigh the risks and benefits of hydropower.

(5) Focusing on managing existing dams better rather than continuing to build new dams. The government should soon stop the expansion of hydropower development in river upstream and rapids, instead, focus on extracting new potential from existing dams. Dam developers should fulfill their obligations in maintaining dam safety, minimize risks, reduce ecological impact, restore ecosystem services, and assist resettled communities. Judging from sheer numbers, China had led the world in the number of dams and major dams, and total installed hydropower capacity after 11th Five-Year Plan.² What will the developers do to the retired dams in the coming decades? And who will shoulder the life-cycle cost and impact of

these dams?

CHECKING THE PULSE OF RIVERS

The Third Plenum of the 18th Central Committee emphasized the building of an ecological civilization and directed the institutionalization of environmental protection. It rekindled the hopes of environment groups towards a national policy that reexamines hydropower development and prioritizes water resources restoration. Watershed management and integrated planning of Chinese rivers must be based on a clear and complete ecological red line mechanism. The **third chapter** of this report attempts to analyze the biodiversity of the Yangtze (Jinsha), the Lancang, and the Nu basins, as well as the threats they are facing. The chapter identifies priority protection areas, and provides decision-making support to the actions needed to protect these key areas.

SEEKING OTHER SOLUTIONS

With the fast growth of non-hydropower alternative energy in China, hydropower’s advantage in emission reduction is diminishing. The relative ecological risk for the fast development of hydropower is higher than wind and solar power expansion. Meanwhile, the connection between hydropower and energy-intensive, high polluting industries further compromises hydropower’s contribution in reducing carbon emissions. The **fourth chapter** of the report looks at the connection between hydropower and other energy industries.

Prior to the 12th Five-Year Plan, the potential for development in non-hydro alternative energy was significantly underestimated. With the 12th Five-Year Plan for Energy Development, it becomes possible to give non-hydro alternative energy more room to grow and encourage it to partially replace hydropower development. Interestingly, installed new capacity targets for wind and solar, 70 GW and 41 GW respectively, wind and solar will surpass the new installed capacity target for hydropower (74 GW) during the 12th Five-Year Plan period (2011-2015). However, the aggressive development of renewable energy has not been reflected in the national energy projection

² According to 1950 statistics from the International Hydropower Association, out of the 5,268 dams worldwide, China only had 22. In 2008, according to the Chinese National Committee on Large Dams, China ranks the sixth worldwide in annual river runoff (after Brazil, Russia, the United States, Canada, and Indonesia), but leads by far in the number (4,685) of large dams (higher than 30 meters). In 2013, the first National Water Census shows that China has 98,002 reservoirs, and 46,758 dams. In 2011, China reportedly had more than 5,200 dams higher than 30 meters, and more than 140 dams higher than 100 meters.

and emission reduction scenarios.

Due to the institutional flaws, the energy-intensive and high polluting industries (such as steel, cement, and non-ferrous metals) have experienced continuous expansion and suffered from structural overcapacity and overproduction over the past 10 years. Our field study shows that dam development in tributary rivers and mining operations (and their pollutions) are mutually reinforcing. Furthermore, the planning and approval processes of mining industries are even more invisible and opaque than dam development.

Energy-intensive and high pollution industrial parks that lie in the upstream of rivers are suspected to exceed local environmental carrying capacity and pollutants discharge limits. For example, the China National Petroleum Corporation's (CNPC) Anning Petrochemical Industrial Park refines 10 million tons per year and its pollution of air and water has angered local communities. The industrial park discharges industrial wastewater directly into the Jinsha River's immediate tributary. Furthermore, the industrial park did not meet its CO₂ emission reduction targets in 2012, which resulted China's Ministry of Environment suspending approval of all CNPC projects.³ Hydropower's theoretical emission reduction potential should not be viewed separately from the industries it powers. Specifically, hydropower should be analyzed in conjunction with the energy-intensive and polluting industries it spurs, and well as the new wave of urbanization and industrialization happening in the upper- and mid-stream regions of China's southwest rivers.

China's energy challenges need to be addressed in two approaches. First and foremost is industrial structure optimization, using economic restructuring to force and encourage emission reduction, and to reduce energy intensity.⁴ Meanwhile, focus on energy demand reduction through industrial and residential energy efficiency programs. The second approach is developing renewable energy and its market. China is targeting 11.4% and 15% of non-fossil energy in primary energy consumption by 2015 and 2020, and promoting non-fossil energy to become mainstream

energy source between 2030 and 2050. Whether it is for the development of the low carbon economy or the fulfillment of China's emission reduction commitments, the fundamental premise of a nation's development is the protection of its natural resources, of which water resources and freshwater ecosystem are among the most fundamental.

LEARNING FROM OTHERS

Chapter five of the report introduces western experience in hydropower development as a benchmark for China, specifically looking at how river protection legislation manages hydropower. This chapter compares and analyzes different river protection measures in the United States, Norway, Canada, and Australia, as well as examining the well-managed hydropower development in some other countries.

For example, both the United States and Germany have large manufacturing industries. In the past two decades, even though both countries—especially the United States—still have plenty of room for hydropower development, it has not been the main source of growth for renewable energy. China's large population and industries are heavily dependent on its river systems. Learning from other countries' legislative experience, China needs to insist on ecological red lines, veto any hydropower project that violates the red lines, and protect through legislation our river ecosystems over hydropower development.

Many rivers in China are international rivers. Downstream countries on the Lancang, the Nu, and the Brahmaputra have regularly criticized China's upstream dam building. While assisting downstream countries own hydropower development, Chinese dam developers are also facing social conflicts of many kinds. We believe the friendly, mutual respect, and mutual beneficial diplomatic relationship between neighboring nations should always outweigh the interests of hydropower companies. China cannot survive without water resources, nor can our neighbors. Both domestic and abroad, the Chinese authorities and industries need to adopt and promote high standard social and environmental impact assessment, public participation and information disclosure.

³ Xinhuanet, "CNPC and Sinopec exceed emission targets, MEP postpones projects approvals." http://news.xinhuanet.com/fortune/2013-08/30/c_125279693.htm.

⁴ China's wastewater discharge volume per unit of GDP is 4 times higher than developed industries, solid waste volume per unit of industrial output 10 times higher. China's energy intensity is 7 times higher than Japan, 6 times higher than the United States, and 2.8 times higher than India. See the Beijing News, <http://news.qq.com/a/20120904/000754.htm>.

ADVISING RIVER PROTECTION

In the sixth and **last chapter**, we suggest and appeal. We hope that decision-makers can learn from past experience and avoid repeating mistakes. We hope China will no longer sacrifice the rivers to ill-managed hydropower development or malfunctioning public policy. Instead, we hope China can proactively draw ecological red lines, promote renewable energy, and push for river protection legislation.

The Third Plenum asked for river management reform and institutionalized ecological civilization. To achieve that, rivers' ecological civilization should incorporate ecosystem recovery and sustainable development; and basinwide management should maintain an ecological bottom line, as well as fairness and inclusiveness. We must establish and improve public participation mechanisms in river management decision-making, fulfill river basin's integrated planning and environmental impact assessment, and realize basin planning before construction approvals. We should conduct more field studies on the geological risks of hydropower, allow different voices to be heard in decision-making, so as to inform risk analysis as well as the public. Hydropower projects approval procedures ought to be strictly followed, public opinion on the low criteria for starting construction ought to be soon reviewed, outdated policies ought to be abandoned and replaced. Construction should only start after the entire process of environmental impact assessment is completed.

For rivers with cascades of dams, improved management systems needs to hold developers accountable throughout the dam's entire life cycle, and require the independent approval of the different construction stages. The "dam rush" cannot be controlled when hydropower developers can pass their financial burden onto taxpayers. At the same time, river ecological red lines must be drawn in currently unprotected areas immediately. Renewable energy should be promoted and river protection legislation pushed.

Finally, we have two special appeals:

1. As a notorious example of violating ecological red line, the construction of Xiaonanhai Dam needs to be cancelled. We also urge the State Council to reverse the 2011 redrawing of the Upper Yangtze Rare and Endemic Fish National Nature Reserve,

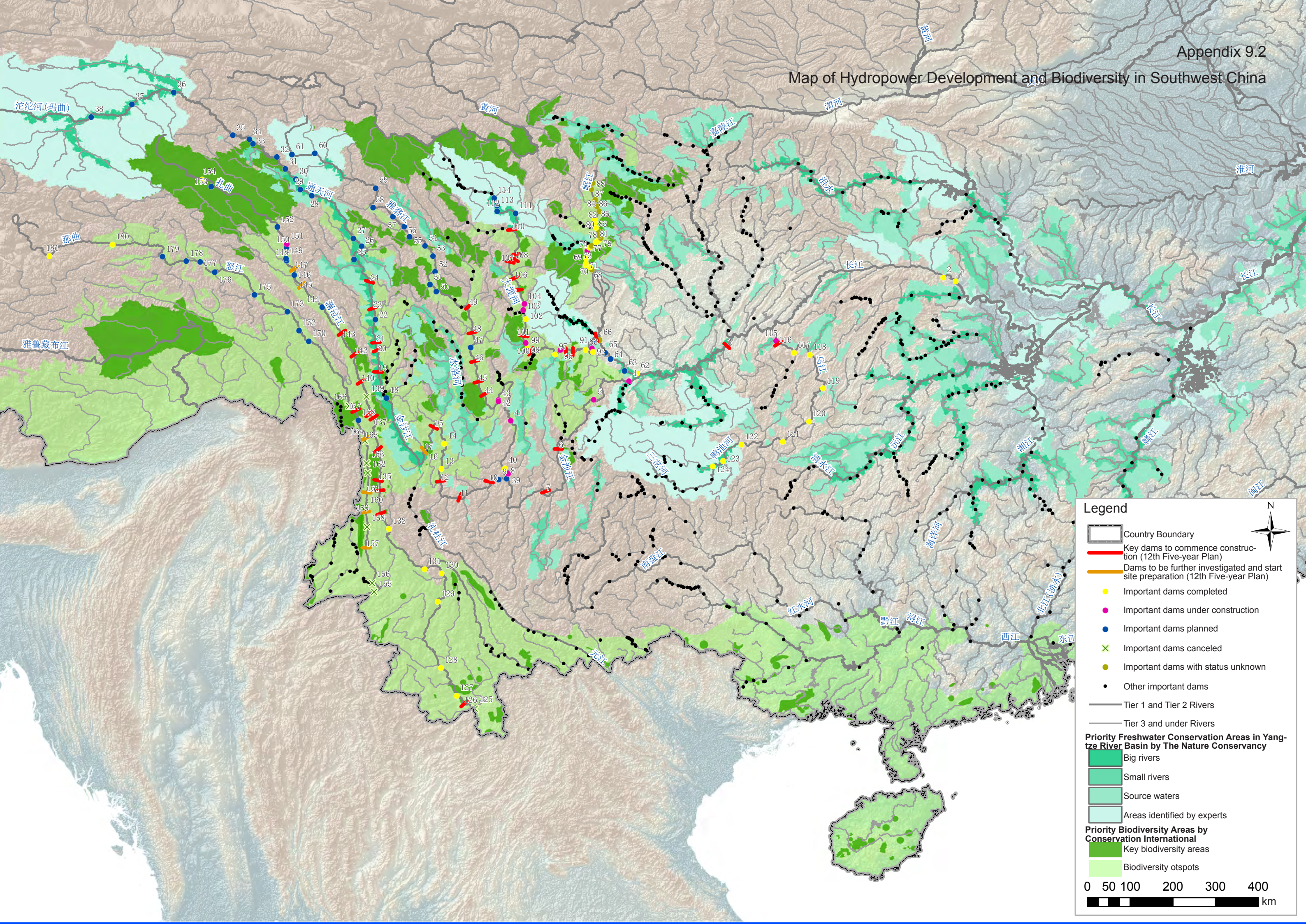
so that ecological red lines in upstream Yangtze are no longer threatened by hydropower development.

2. Postpone the development of the five-dam cascade on the Nu River and extract new potential from existing dams. Help the communities in the Nu River Valley find a more environmental and culturally friendly paths of development. Introduce new legislation and regulations to reflect the values of free-flowing rivers and protect the rivers upon which the Chinese civilization has enjoyed and prospered for generations.

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Map of Hydropower Development and Biodiversity in Southwest China



Appendix 9.3

List of Hydropower Stations on Major Rivers in Southwest China

No.	Cascade No.	Dam Name	Status
1	Yangtze River 3	Gezhouba	Completed
2	Yangtze River 2	Three Gorges	Completed
3	Yangtze River 1	Xiaonanhai	To commence construction (12th Five-year Plan)
4	Jinsha River Downstream 5	Xiangjiaba	Under construction
5	Jinsha River Downstream 4	Xiluodu	Under construction
6	Jinsha River Downstream 3	Baihetan	To commence construction (12th Five-year Plan)
7	Jinsha River Downstream 2	Wudongde	To commence construction (12th Five-year Plan)
8	Jinsha River Downstream 1	Yinjiang	Planned
9	Jinsha River Midstream 9	Jinsha	Planned
10	Jinsha River Midstream 9	Guanyinyan	To commence construction (12th Five-year Plan)
11	Jinsha River Midstream 7	Ludila	To commence construction (12th Five-year Plan)
12	Jinsha River Midstream 6	Longkaikou	To commence construction (12th Five-year Plan)
13	Jinsha River Midstream 5	Jinanjiao	Completed
14	Jinsha River Midstream 4	Ahai	Completed
15	Jinsha River Midstream 3	Liyuan	To commence construction (12th Five-year Plan)
16	Jinsha River Midstream 2	Liangjiaren	Planned
17	Jinsha River Midstream 1	Longpan	To be further investigated and start site preparation (12th Five-year Plan)
18	Jinsha River Upstream 11	Bengzilan	Planned
19	Jinsha River Midstream 10	Rimian	To commence construction (12th Five-year Plan)

20	Jinsha River Midstream 9	Changbo	To commence construction (12th Five-year Plan)
21	Jinsha River Midstream 8	Suwalong	To commence construction (12th Five-year Plan)
22	Jinsha River Midstream 7	Batang	Planned
23	Jinsha River Midstream 6	Lawa	To commence construction (12th Five-year Plan)
24	Jinsha River Midstream 5	Yebatan	To commence construction (12th Five-year Plan)
25	Jinsha River Midstream 4	Boluo	Planned
26	Jinsha River Midstream 3	Yanbi	Planned
27	Jinsha River Midstream 2	Gangtuo	Planned
28	Jinsha River Midstream 1	Guotong	Planned
29	Tongtian River 10	Sewu	Planned
30	Tongtian River 9	Xirong	Planned
31	Tongtian River 8	Cefang	Planned
32	Tongtian River 7	Genzhe	Planned
33	Tongtian River 6	Leyi	Planned
34	Tongtian River 5	Dequkou	Planned
35	Tongtian River 4	Ruoqin	Planned
36	Tongtian River 3	Lumari	Planned
37	Tongtian River 2	Yage	Planned
38	Tongtian River 1	Marigei	Planned
39	Yalong River 23	Tongzilin	Under construction
40	Yalong River 22	Ertan	Completed
41	Yalong River 21	Guandi	Under construction
42	Yalong River 20	Jinping 2	Under construction
43	Yalong River 19	Jinping 1	Under construction
44	Yalong River 18	Kala	To commence construction (12th Five-year Plan)
45	Yalong River 17	Yangfanggou	To commence construction (12th Five-year Plan)
46	Yalong River 16	Mengdigou	To commence construction (12th Five-year Plan)
47	Yalong River 15	Lenggu	Planned
48	Yalong River 14	Yagen	To commence construction (12th Five-year Plan)
49	Yalong River 13	Lianghekou	To commence construction (12th Five-year Plan)
50	Yalong River 12	Gongbagou	Planned
51	Yalong River 11	Gongke	Planned

52	Yalong River 10	Xinlong	Planned
53	Yalong River 9	Yingda	Planned
54	Yalong River 8	Tongha	Planned
55	Yalong River 7	Geni	Planned
56	Yalong River 6	Ada	Planned
57	Yalong River 5	Reba	Planned
58	Yalong River 4	Renqingling	Planned
59	Yalong River 3	Wenbosi	Planned
60	Yalong River 2	Danikanduo	Planned
61	Yalong River 1	Yangri	Planned
62	Min River Downstream 5	Pianchuangzi	Completed
63	Min River Downstream 4	Longxikou	Planned
64	Min River Downstream 3	Jianwei	Planned
65	Min River Downstream 2	Shazui	Planned
66	Min River Downstream 1	Banqiaoxi	Unknown
67	Min River Upstream 22	Yangliuhu	Unknown
68	Min River Upstream 21	Zipingpu	Completed
69	Min River Upstream 20	Yingxiuwan	Completed
70	Min River Upstream 19	Taipingyi	Completed
71	Min River Upstream 18	Futangba	Completed
72	Min River Upstream 17	Shaba	Under construction
73	Min River Upstream 16	Jiangsheba	Completed
74	Min River Upstream 15	Yangmaoping	Unknown
75	Min River Upstream 14	Tongzhong	Completed
76	Min River Upstream 13	Nanxin	Completed
77	Min River Upstream 12	Shigu	Completed
78	Min River Upstream 11	Zongqu	Unknown
79	Min River Upstream 10	Yaneryan	Unknown
80	Min River Upstream 9	Feihongqiao	Unknown
81	Min River Upstream 8	Jinlongtan	Completed
82	Min River Upstream 7	Tianlonghu	Completed
83	Min River Upstream 6	Xiaohaizi	Completed

84	Min River Upstream 5	Lianhuayan	Unknown
85	Min River Upstream 4	Wulibao	Unknown
86	Min River Upstream 3	Longpan	Unknown
87	Min River Upstream 2	Xiningguan	Unknown
88	Min River Upstream 1	Hongqiaoguan	Unknown
89	Dadu River 26	Angu	To commence construction (12th Five-year Plan)
90	Dadu River 25	Fahuasi	Planned
91	Dadu River 24	Shawan	Under construction
92	Dadu River 23	Tongjiezi	Completed
93	Dadu River 22	Gongzui	Completed
94	Dadu River 21	Shaping	To commence construction (12th Five-year Plan)
95	Dadu River 20	Zhentouba	To commence construction (12th Five-year Plan)
96	Dadu River 19	Shenxigou	Under construction
97	Dadu River 18	Pubugou	Completed
98	Dadu River 17	Laoyingyan	To commence construction (12th Five-year Plan)
99	Dadu River 16	Longtoushi	Completed
100	Dadu River 15	Dagangshan	Under construction
101	Dadu River 14	Yingliangbao	To commence construction (12th Five-year Plan)
102	Dadu River 13	Luding	Completed
103	Dadu River 12	Huangjinping	Under construction
104	Dadu River 11	Changheba	Under construction
105	Dadu River 10	Houziyan	To commence construction (12th Five-year Plan)
106	Dadu River 9	Danba	To commence construction (12th Five-year Plan)
107	Dadu River 8	Badi	To commence construction (12th Five-year Plan)
108	Dadu River 7	Anning	To commence construction (12th Five-year Plan)
109	Dadu River 6	Jinchuan	To commence construction (12th Five-year Plan)
110	Dadu River 5	Shuangji-angkou	to commence construction (12th Five-year Plan)
111	Dadu River 4	Busigou	Planned

112	Dadu River 3	Dawei	Planned
113	Dadu River 2	Bala	Planned
114	Dadu River 1	Xiaerxia	Planned
115	Wu River 10	Daxikou	Under construction
116	Wu River 9	Baima	to commence construction (12th Five-year Plan)
117	Wu River 8	Yinpan	Completed
118	Wu River 7	Pengshui	Completed
119	Wu River 6	Shatuo	Completed
120	Wu River 5	Silin	Completed
121	Wu River 4	Goupitan	Completed
122	Wu River 3	Wujiangdu	Completed
123	Wu River 2	Suofengying	Completed
124	Wu River 1	Dongfeng	Completed
125	Lancang River 16	Mengsong	Canceled
126	Lancang River 15	Ganlanba	To commence construction (12th Five-year Plan)
127	Lancang River 14	Jinghong	Completed
128	Lancang River 13	Nuozhadu	Completed
129	Lancang River 12	Dachaoshan	Completed
130	Lancang River 11	Manwan	Completed
131	Lancang River 10	Xiaowan	Completed
132	Lancang River 9	Gongguoqiao	Completed
133	Lancang River 8	Miaowei	To commence construction (12th Five-year Plan)
134	Lancang River 7	Dahuaqiao	To commence construction (12th Five-year Plan)
135	Lancang River 6	Huangdeng	To commence construction (12th Five-year Plan)
136	Lancang River 5	Tuoba	To commence construction (12th Five-year Plan)
137	Lancang River 4	Lidi	To commence construction (12th Five-year Plan)
138	Lancang River 3	Wunonglong	To commence construction (12th Five-year Plan)
139	Lancang River 2	Guonian	Canceled
140	Lancang River 1	Gushui	To commence construction (12th Five-year Plan)
141	Lancang River Upstream 14	Baita	Planned
142	Lancang River Upstream 13	Guxue	To commence construction (12th Five-year Plan)
143	Lancang River Upstream 12	Rumei	To commence construction (12th Five-year Plan)

144	Lancang River Upstream 11	Banda	Planned
145	Lancang River Upstream 10	Kagong	To be further investigated and start site preparation (12th Five-year Plan)
146	Lancang River Upstream 9	Yuelong	Planned
147	Lancang River Upstream 8	Cege	To be further investigated and start site preparation (12th Five-year Plan)
148	Lancang River Upstream 7	Linchang	Planned
149	Lancang River Upstream 6	Ruyi	Planned
150	Lancang River Upstream 5	Xiangda	Planned
151	Lancang River Upstream 4	Guoduo	Under construction
152	Lancang River Upstream 3	Dongzhong	Planned
153	Lancang River Upstream 2	Angsai	Planned
154	Lancang River Upstream 1	Longqingxia	Completed
155	Nu River 12	Guangpo	Canceled
156	Nu River 11	Yansangshu	Canceled
157	Nu River 10	Saige	To be further investigated and start site preparation (12th Five-year Plan)
158	Nu River 9	Shitouzhai	Canceled
159	Nu River 8	Liuku	To be further investigated and start site preparation (12th Five-year Plan)
160	Nu River 7	Lushui	Canceled
161	Nu River 6	Yabiluo	To be further investigated and start site preparation (12th Five-year Plan)
162	Nu River 5	Bijiang	Canceled
163	Nu River 4	Fugong	Canceled
164	Nu River 3	Lumadeng	Canceled
165	Nu River 2	Maji	To be further investigated and start site preparation (12th Five-year Plan)
166	Nu River 1	Bingzhongluo	Canceled

167	Nu River Upstream 15	Songta	To commence construction (12th Five-year Plan)
168	Nu River Upstream 14	Emi	Planned
169	Nu River Upstream 13	Angqu	Planned
170	Nu River Upstream 12	Luola	Planned
171	Nu River Upstream 11	Lalong	Planned
172	Nu River Upstream 10	Yeba	Planned
173	Nu River Upstream 9	Nujiangqiao	Planned
174	Nu River Upstream 8	Kaxi	Planned
175	Nu River Upstream 7	Tongka	Planned
176	Nu River Upstream 6	Xinrong	Planned
177	Nu River Upstream 5	Luohe	Planned
178	Nu River Upstream 4	Reyu	Planned
179	Nu River Upstream 3	Shading	Planned
180	Nu River Upstream 2	Jiqian	Completed
181	Nu River Upstream 1	Chalong	Completed



A “Beautiful China” needs free flowing rivers