Water schemes tamper with nature's design

By Wan Lixin | 2010-7-16

WE still glorify the legendary emperor Yu for his feats in harnessing the rivers and containing the floods.

He succeeded because instead of blocking the water, he directed the water as it naturally flows.

Before the invention of modern machinery, human beings are largely transparent on the landscape, as they did not introduce elements extraneous to the ecosystem.

Today the feats in subjugating rivers are more to be dreaded, than lauded.

Some hitherto little-noticed rivers are being diverted, dammed, tamed for power, and stripped of their life in the process.

A nation that no longer believes in the God of Heaven today reserves its respect for the power of technology and mass-produced consumer goods.

According to the latest issue of Century Weekly, there is a scramble to grab whatever is left of the Hanjiang River that flows through Shaanxi Province and northwest Hubei Province before it joins the Yangtze River in Wuhan, capital of Hubei.

Nature has denied China any rivers linking up the green south with the dusty north, as the legendary Yangtze and Yellow rivers both run eastward to the sea.

While much of the north is parched, the south may be suffering seasonal floods.

Hence the South-North Water Transfer Project, first conceived by Mao Zedong.

The project has gained momentum in recent years.

Three routes are proposed.

The western route, involving the headwaters of the Yangtze and Yellow rivers in the Qinghai-Tibet Plateau, remains highly controversial.

The eastern route basically utilizes the course of the Grand Canal that was started 2,400 years ago and completed during the Sui Dynasty (581-618 AD). The 1,700-km-waterway links Beijing and Hangzhou. As it meanders through the economically vibrant east coast, the water is seldom clear and blue.

That makes the central route, kicked off in 2003, one of the most anticipated.

The central route would divert water from the upper reaches of the Hanjiang to Beijing and Tianjin, which a price tag of 80 billion yuan (US$12 billion) (already doubled).

In Shaanxi the Hanjiang flows south of the Qinling Mountains (the south-north divide) and travels southeastward to Hubei, draining a region of 20 million people, before emptying into the Yangtze.

Flowing through a region relatively less associated with the heady growth of the past two decades, the Hanjiang remains conspicuously clear.

That is changing.

To channel the water northward from the Hanjiang, the Danjiangkou Reservoir's dam is being raised from its current 162 to 177 meters, and in four years' time 9.5 billion cubic meters of water would be pumped annually to Beijing and Tianjin, 1,000 kilometers away.

But Beijing and Tianjin are not the only thirsty cities.

What with water-guzzling industrial expansion and population growth, Shaanxi and Hubei themselves are craving water.

To address its own water shortage problem, Shaanxi intends to divert part of the Hanjiang to the Wei River, through a tunnel dug through the mighty Qinling. Digging the tunnel would cost 17 billion yuan (US$2.5 billion), while the resultant GDP growth would amount to hundreds of billion yuan.

Hidden costs

That makes for sound economics, when the ecological dimension is ignored.

To further maximize the river's economic benefits, the province also plans to dam the upper reaches, successively at seven levels, for power generation.

That sounds ominous for downstream Hubei, for reduced water flow and volume would render obsolete the existing irrigation facilities, build up pollutants, and paralyze river transport.

A third of the fish species would be exterminated as they would be unable to negotiate the dams.

But Hubei is making the most of the river's residual economic value.

It plans to dam Hanjiang's middle and lower reaches, also in seven levels.

So the future Hanjiang would be reduced to 15 slow-flowing stretches, which makes it look more like a strings of pools.

Local officials smugly compare their effort to a project on America's Tennessee River. The famous Tennessee Valley Authority federal project covers all or part of 10 states and involves flood control, navigation, power generation, economic development, leisure and other areas.

But some point out that while the US project boasts 54 reservoirs, on the Hanjiang's tributaries alone there are 900 reservoirs, and more are being created.

As the downstream Hanjiang is already much reduced, Hubei plans to spend 8 billion yuan to divert part of the Yangtze to make up for the lesser Hanjiang.

The central route for south-north water transfer and the ensuing local scramble for water suggest that growth is being extracted at any cost.

These aggressive diversions, dammings, and replenishments are intended to create a cycle of what superficially appear to be solutions, all with huge GDP-boosting potential.

None of these solutions changes the fact that they redistribute water, not create it. There's only so much water to go around.

Situated at the estuary of the Yangtze River, Shanghai, for one, would have to be prepared for reduced Yangtze flow.

The megacity's ambitious plan to extract drinking water at the river mouth would sound less inspiring when the supply becomes more vulnerable to invasion of tidal sea water.

The city should also be prepared for more pollutants in the river as a result of upstream industrial expansion and reduced river flow.

The huge costs of remedying these artificially triggered supply-demand imbalances would necessarily be shifted to future generations.

Studies about the habits of salmon along North America's Columbia river showed how a species can be genetically adapted to a single river, and how human engineering marvels turn out to be brutal.

That's why many Americans are agitating for de-engineering, breaching, or dismantling their dams.

As part of the ecosystem, we humans like all other species must be contented with the niche assigned to us by the nature.

This would be the best guarantee for the survival of posterity, which should be more important than our capacity to churn out cheap consumer products.

We do not lack warning.

This year in south China the unprecedented drought was been quickly followed by rains and floods of historic proportion.

By Wednesday, the latest round of rainstorms and flooding had affected 32 million Chinese along the Yangtze.

In the Qinghai-Tibet Plateau soldiers are rushing to prevent the collapse of a reservoir, and over 500 reservoirs in Hubei and more than 1,000 in Anhui Province have exceeded warning levels.

These dangerous reservoirs are a mockery of similar hydro projects once hailed as marvels, nearly all with vaunted flood-control capacity.

Read more:
http://www.shanghaidaily.com/sp/article/2010/201007/20100716/article_443213.htm#ixzz1b5PbREgj

http://www.shanghaidaily.com/sp/article/2010/201007/20100716/article_443213.htm