For photographs of the trip on the Yangtze River from Wanxian to Yichang, please see the page of photos.

The Three Gorges dam: China's new and sinister Great Wall

'A stone wall shall face the west going upstream
until a placid lake is formed in the narrow gorges.
The Goddess of the Mountains, if she still exists,
will be astounded at such a change in the world.'

The leader of the Chinese Communist Party, Mao Zedong, was inspired to write these poetic lines during his famous swim in the Yangtze River in the 1950s. He had a vision that a great wall could tame the wildness of the river, which caused considerable destruction every year. And so the Great Helmsman ordered a gigantic dam to be built, whose purpose was to protect millions of people from flooding whilst simultaneously creating energy to fuel the Communist Revolution.

The Goddess of the Mountains (if she exists) has probably been laughing up her sleeve up to now, since Mao's stone wall has never been constructed. However, she might not laugh for much longer at the beginning of next century, now that the Chinese government under Prime Minister Li Peng has made a dynamic start on the execution of a technical high flight unequalled in the rest of the world. The exceedingly controversial, so-called Three Gorges project comprises the building of a gigantic dam in the Yangtze River at a village called Sandouping, as well as the world's biggest hydro-electric power station, which will be active in 2009.

Captain Zhou Hongwei, who sails 'his' cruise ship *Sunrise Number Four,* packed with 600 tourists, 900 kilometres downriver from Chongqing to Wuhan and back again every week, speaks with awe of the third longest river in the world (after the Nile and the Amazon). He has only just turned thirty, but has already spent half his life sailing back and forth through the valley, like his father and grandfather before him. Zhou is familiar with the perils of the wild, dark river: 'The current is strong and there are a lot of shoals. Thick fog or strong wind and big waves often make it difficult to avoid these shoals. And our helmsmanship is really tried to the utmost under these conditions.'

This certainly applies to the stretch of river where the ship has to be manoeuvred through three successive gorges over a distance of 200 kilometres. The majestic gorge walls, towering hundreds of metres over the ship, come extremely close to the side of the ship every now and then, and the muddy water, with rocks sticking up here and there, is full of eddies and whirlpools. The tourists, almost all of whom are Chinese, brave the pouring rain in order to soak up the classical scenery, which will disappear in ten years' time when the mega dam is built. A retired teacher from Beijing, visiting this part of his country for the very first time, says: 'What a wonderful sight to see the waves beating against the rocks and gradually wearing them away! Water and mountains evoke the most incredible emotions. A marvellous sensation!'

Golden Waterway

The Yangtze River is one of China's major navigation courses. It is known as the 'Golden Waterway' and accounts for almost 80% of all Chinese river cargo trade. Part of the Three Gorges project comprises five locks, the biggest ever designed (280 m. long, 35 m. wide and 5 m. deep), whose task is to ensure that ships can triumph over the 100-odd metres' difference in water level. These locks will also enable sea-going ships of up to 10,000 tons to travel upriver from Shanghai to the city of Chongqing, a distance of almost 2500 kilometres. The port of Chongqing, with a population of 15 million, is expected to develop into an industrial centre on the same scale as Shanghai during the course of the 21st century.

The 'steps' for the five locks are already taking shape on the building site in Sandouping, where these locks will eventually rise like a stairway one above the other. But apart from this, the site is still an immense, bare and uneven plain where the predominant colours are grey and beige. For the most part, it resembles an opencast mine where gravel or marlstone is dug up above ground, but then comprising a surface area of 15 square kilometres. Enormous piles of pebbles and chunks of

rock are interspersed with small muddy lakes. Although cranes and bulldozers are at work on the site, a large part of the work is still being done by hand using primitive tools. For instance, materials are transported in wheelbarrows, or on bamboo poles balanced on the shoulders of two workmen.

Looking down from the highest point – where tourists can have their photograph taken – the blue and orange lorries driving around on man-size wheels appear to be no more than slowly-moving clouds of dust, although many of the three thousand lorries are standing still. And it does not look as if as many as 18,000 men are at work here either, which is the official story. Yuan Fei, of the Propaganda Department, who is also acting as guide, explains: 'We have just completed one of the construction phases and will be starting the next phase in the near future. That's why there are not so many people working at present.'

The Three Gorges dam will result in an elongated reservoir 660 kilometres long – which is the same as the distance between Brussels and Geneva – and a couple of kilometres wide. It also means that one million people living in the area which will be inundated will be forced to go and live elsewhere. This is like asking all the inhabitants of the province of West Flanders to move somewhere else! Twenty-six turbines with a total capacity of 18,200 megawatts will be constructed in the 2½-kilometres-long dam in order to generate electricity. The 700-megawatt turbines (engines of this magnitude are only used in Brazil) will be able to provide one-ninth of the present total electricity production in China. As an analogy, the total installed capacity of all Belgian electric power stations is 15,178 megawatts.

Basically, the Chinese government is chiefly interested in the amount of electricity which will be available to boost the rapidly-expanding Chinese industry. However, as far as the public are concerned, the government keeps on hammering away at its major argument in favour of constructing the dam (which at 185 metres high will be as tall as the Euromast in Rotterdam): the fact that it will offer protection against flooding to 15 million people. Despite this, experts claim that the mega dam's 'protection value' is not all that high. They put forward a number of points to support this statement, including the fact that the enormous floods which occurred in the Yangtze basin this summer were primarily caused by heavy rainfall downriver from the dam construction site.

It cannot be denied that something must urgently be done to prevent the floods in the Yangtze valley. During the past 2000 years, China's longest river has burst its banks more than 200 times. This resulted in the death of 30,000 people in 1954 and a total of 300,000 in 1931 and 1935. According to the official figures, more than one million people have died this century as a result of major and minor inundations, apart from the thousands of billions of dollars' worth of economic losses which are suffered time and again.

Fierce argument

One ominous fact is that the hydraulic engineers have been defeated by the power generators in the Chinese civil service. These two groups were involved in a fierce argument about the water level behind the mega dam. The engineers claimed that the level of the water should not normally exceed 150 metres (and should also be reduced to 140 metres in the rainy season) in order to ensure sufficient capacity to collect surplus water in the reservoir. But the technical directors responsible for the hydro-electric power station considered these levels to be insufficient for the gigantic turbines to generate electricity efficiently, and advocated a normal water level of 175 metres. The government has decided in favour of the power generators and ordered a level of 175 metres.

No words can really do full justice to the enormity of the consequences of this mega project, which has been discussed in China for seventy years. Dozens of villages - including temples with art treasures many centuries old, burial grounds, stalactite caves, factories, mines and more than 600 schools – will disappear beneath the water at the very spot where they came into being. Some may even be thousands of years old! And tens of thousands of hectares of agricultural land and woodland will be flooded. The question is whether the major local product, oranges, will flourish higher up in the mountains. At the present moment, the orange trees will grow up to a clear line and no further. The fruit growers will probably have to change over to a different crop, which will quite likely result in a lower yield.

A long list of objections and hazards can be compiled from all the comments made by foreign experts, whilst criticism within China itself has meanwhile been effectively silenced. These include the immeasurable damage to the environment which the dam will cause. In addition, foreign experts also have grave doubts regarding the technical and financial feasibility of the project, which will cost 30 billion dollars according to the most recent official Chinese estimate. Non-official estimates work out at about 74 billion dollars, as well as a 10-year delay in completion which is planned for 2019.

The World Bank has refused to help fund the construction, and the United States Export-Import Bank will not be lending its support either in the shape of cheap loans to US companies that would like to be involved in the construction. Moreover, there is always the risk that the colossal dam will burst, possibly as a result of an earthquake or a terrorist attack, bringing death and destruction to millions of people living downriver in huge cities like Wuhan, Nanjing and Shanghai.

The Chinese government, however, has turned a blind eye and a deaf ear to all this criticism; the hydro-electric power station must and shall be built at all costs. Prime Minister Li Peng, himself a power-station specialist trained in Russia, opened the Sandouping construction site in person in December 1994. There is a rumour that Li wants to immortalise himself and that he forced the project through against the better judgement of others. And so the dam has really become a sign of megalomania on the part of the present Communist leaders, who are facing a politically uncertain future, and has perforce turned into a symbol of national pride on the same scale as the Great Wall.

Silting up

One of the biggest problems forecast by foreign experts is the silting up of the reservoir, which will endanger the efficient production of electricity. The waters of the Yangtze contain so much sand and grit that the river is permanently dark brown in colour. The heavier bits will sink to the bottom right at the top of the reservoir near the huge city of Chongqing, since the fast current of the river will slow down to a relatively large extent at that point. Dredging will be difficult because the bottom of the reservoir will be dotted with inundated trees and houses, and therefore not flat. In addition, experts say that underwater landslides along the entire length of the dam basin will probably occur, since the dry foot of the slopes which currently constitutes a substantial basis will, of course, eventually be saturated with water. The weight of the mountain will then only be supported by a swampy mass and will cave in.

The Chinese authorities say that they have the sedimentation situation under control: only clear water will be collected behind the dam, and the muddy water will be quickly sluiced through the dam. The director-general of the Three Gorges Development Company, Lu Youmei, explains: ‘All reservoirs have a silt problem. But we’ll be resolving this one by not storing the water during the high-water season but forcing it straight through the dam, because the river carries the most sand at high water.’

The American geologist Luna Leopold warns that this method cannot prevent the reservoir from silting up: ‘There are 17 reservoirs in the world which work in this way. The biggest of these, Sanmenxia in the Yellow River in China, is only one-fifth of the size of the Three Gorges reservoir. At Sanmenxia, the deposits of silt were considerably underestimated, which resulted in severe damage to the dam after two years. Consequently, the dam had to undergo radical reconstruction. The power station will never function as it should, and is regarded as an economic white elephant,’ contends Leopold.

Lu Youmei says scornfully that the problems with Sanmenxia were caused by a lack of expertise on the part of the Russian designers. He emphasises that the Chinese are the only real experts when it comes to silt control. The director-general concurs with the opinion that problems will arise at Chongqing in the long term: ‘Chongqing harbour will have problems 60 to 70 years after the dam is built,’ he says. ‘However, we’ll be constructing more dams further upriver, each of which will retain part of the sediment. In addition, we’re going to plant a green belt of trees and shrubs on the banks of the reservoir to help combat erosion.’ And that’s the end of the matter as far as Lu is concerned.

Lu is the government’s official mouthpiece with regard to this extremely politically sensitive project. The central government has put the fear of God into people throughout the country to such an

extent that nobody dares to deviate from the official line. An example of this is the Mayor of Chongqing, Liu Zhizhong, who, while admitting that a silt problem is likely after the dam has been constructed, immediately adds that he has every confidence that the government will resolve the issue in good time: 'Experts are studying the problem and working on a solution,' he says. 'And reafforestation has already commenced.'

During a ten-day trip through the Yangtze valley – continually under the eagle eye of an official from Foreign Affairs during stopovers – not one single civil servant who talked to us between Chongqing and Wuhan was willing to confirm that the project is beset by well-nigh insurmountable problems. Nevertheless, issues were raised by various Chinese officials during previous interviews with foreign journalists from which we may conclude that the execution of a number of crucial parts of the project is being hindered by several factors, including lack of money. A prime example is the engineer Guo Chengmo, of the Chongqing Department of the Environment, whom the New York Times quotes as saying: 'There are still a great many problems which still have to be resolved, but I don't think our leaders are thinking so far ahead. This is my personal opinion.'

Untreated sewage

In particular, he is seriously concerned about the thousand billion or more litres of untreated sewage discharged every year into the river through the drains and the industrial waste pipes. This will be an environmental-technical time bomb because the toxic substances will mix in with the sediment in the reservoir. One of the results will be that the fish will contain insalubrious quantities of mercury. At the end of last year, the New York Times quoted Guo as saying, 'The city council has not evolved any plans to install waste water purification plants, and I don't think that this kind of facility will be put on the priorities list during the next 10 years either.' And now, six months later, our Chinese guide informs us that Guo - a seasoned engineer – is not available for an interview. The construction of a water purification plant has meanwhile commenced in Chongqing with the aid of a Danish company. About 20 more have been planned, but these can only be built after money has been made available.

It transpires *en route* that the Party's propaganda department has put in some convincing work. During chats with the 'afflicted' inhabitants of the small towns where the ship puts in, emphasis is always laid on the new and better houses which will be allocated to them. 'I'll be moving to a stone house, which I'm sure will be better than this one,' says 70-year-old Mrs Li outside the door of her small mud-plastered home in Fengdu. Together with 55,000 other people, Mrs Li will be housed in a new town on the opposite bank of the river. She has never been there in her whole life.

When asked whether she would not prefer to stay on this side of the river, she replies, 'If the party leaders ask us to move, we have no choice but to do so.' And from then on her lips are sealed on the matter. A passer-by joins in the discussion: 'The government has decided that the dam and the hydro-electric power station will benefit everybody in China. Personal interests must take second place to this.' Mr Mao from the bookshop opposite is especially happy that the Three Gorges power station will be the biggest in the world: 'This is proof that China is a modern and developed country,' he says proudly.

Back on the ship, Captain Zhou Hongwei gives a philosophical answer when the consequences of the dam are mentioned: 'The main thing is that the shoals will disappear and navigation will be safer. Although it's certainly a pity that the scenery will be affected, the fact that the water level will be higher means that other beautiful spots will be created. New things put new ideas into our heads and make sure we keep a fresh outlook on life. It's just like a flowering plant: one flower withers and dies, another one opens. Although it looks different, it's still the same plant and it will always be beautiful.'