

## Basin short profile

Name	<b>Chao Phraya river</b>	Country	<b>Thailand</b>																																							
Area	160,000 km <sup>2</sup>	Altitude	From 2,100 m to the sea																																							
Rainfall/Evapo	<p>Average rainfall: 1,150 mm varies between 1,000 and 1,300 mm Modal distribution</p> <p>Crop reference ETo: 1300-1600 mm/year</p>	<table border="1"> <caption>Lower delta: Monthly Rainfall and Evapotranspiration</caption> <thead> <tr> <th>Month</th> <th>Rainfall (mm)</th> <th>Evapotranspiration (mm)</th> </tr> </thead> <tbody> <tr><td>Jan</td><td>10</td><td>110</td></tr> <tr><td>Feb</td><td>10</td><td>120</td></tr> <tr><td>Mar</td><td>20</td><td>150</td></tr> <tr><td>Apr</td><td>50</td><td>150</td></tr> <tr><td>May</td><td>130</td><td>140</td></tr> <tr><td>Jun</td><td>100</td><td>130</td></tr> <tr><td>Jul</td><td>110</td><td>120</td></tr> <tr><td>Aug</td><td>140</td><td>110</td></tr> <tr><td>Sep</td><td>280</td><td>100</td></tr> <tr><td>Oct</td><td>200</td><td>100</td></tr> <tr><td>Nov</td><td>40</td><td>100</td></tr> <tr><td>Dec</td><td>10</td><td>100</td></tr> </tbody> </table>		Month	Rainfall (mm)	Evapotranspiration (mm)	Jan	10	110	Feb	10	120	Mar	20	150	Apr	50	150	May	130	140	Jun	100	130	Jul	110	120	Aug	140	110	Sep	280	100	Oct	200	100	Nov	40	100	Dec	10	100
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Landuse (1985)	<p>Forest: 40% (48% for northern region, against 68% in 1960); Agriculture: 53%, Paddy: 15%; Shifting cultivation 28%; Savanah: 17%; Homesteads/ orchard: 15%</p>																																									
Irrigation	<p>Total ≈ 2.4 million ha (29% agriculture),</p>																																									
Water Indicators	<p>Runoff coefficient: 92% wet season and 7% in dry season. Renewable water available: 1,600 m<sup>3</sup> (runoff)/year/pers            Regulated water (% rainfall and % run-off): 20% and 55%            Beneficial (process) depleted fraction: 10%            Non-committed outflow to the sea: ≈ 15% of total runoff            Water diverted per person: ≈ 1,160 m<sup>3</sup>/pers/year (4.8 l/day/capita)            Water use per sector (depletion): Agriculture 76%, Industry 3%, Domestic uses 9%</p>																																									
Drinking water	<p>Mostly from wells in villages and rivers for main cities.</p>																																									
Main crop(s)/yield	<p>Rice (5 t/ha); Sugar cane (60t/ha); Rainfed: Maize (4 t/ha), sorghum (2t/ha)</p>																																									
Population	<p><b>13 million</b> in the delta, <b>10 million</b> people in the rest (36% of Thailand); Pop. density: <b>156 ha/km<sup>2</sup></b>. (from 4 to 31,000 ha/km<sup>2</sup> district-wise). Sex ratio M/F (delta): 0.93; % Population under 18: <b>31%</b> (excluding BKK). Religion: Buddhist / Population growth 3.4% in the 1960s, <b>0.95%</b> at present; fertility <b>1.7</b>. Population over 15 active in agriculture: <b>41%</b> (30% for central region and 56% north). Ethnic minorities: 6% of northern population.</p>																																									
Floods	<p>Floods are a major problem, particularly in the delta where roads, diking and urbanization reduce natural buffering.</p>																																									
Groundwater	<p>Annual safe yield of 2.8 Bm<sup>3</sup> but (90% in lower delta). Aquifer drawdown in Bangkok (land subsidence); Deep well irrigation in Sukhothai. Shallow aquifers in upper delta and middle basin used for complementing irrigation.</p>																																									
Environmental and health issues	<p>Severe pollution (water quality) problems in the lower basin (Bangkok area).</p>																																									
Protected areas	<p>National parks</p>																																									
Land/labour	<p>Average farm size (irrig): 1 ha (+ highlands)</p>	<p>Rural daily wage: 150 Baht/day (2.5\$)</p>																																								
Land tenure	<p>Most irrigated lands are privately owned, either traditionally or through settlements projects (selling not allowed); rainfed ag. Lands and forest usually belong to the state.</p>																																									
Water Management	<p>All large and medium scale irrigation schemes managed by Royal Irrigation Department; communal irrigation in the north managed by farmers.</p>																																									

	Proto-basin level organizations are being formed at the sub-basin level.
Allocation rules	Allocation mainly concerns the Uda Walawe scheme. This is done by Mahawelli in a top-down and centralized manner.
Hydropower	720 MW power station under Bhumipol and 50 MW under Sirikit.. Hydropower represents 8% of Thai energy (against 35% in 1972): each dam provides around 1%.
Legal framework	A new Water Act and Water Policy is under consideration by the parliament. The Act emphasizes basin management (and organizations) and the definition of water rights for bulk users.
Politics, Civil Society	Stakeholders participation in natural resource management is very limited. Several NGOs are present in the basin and deal with rural credit, tank rehabilitation, fish breeding, water harvesting, public health initiatives, pre-school education, nutrition, agricultural technical support or training, etc. Weak presence on institutional issues.
Future developments	
Conflicts, problems, challenges	Upland agriculture vs forest conservation & state enclosures Control overdraft in Bangkok

*General basin layout map*