

**KD4**

**Environmental Water Security**

Indicator	Subindicator	NO.	Sub-subindicator	Unit	Data Source	Year of Data	Reference
KD4	River health index	1	Based on model results	0-1		2010	Manuscript in preparation
		2	Threat to environmental water security	0–1		2000	Vörösmarty et al. (2010)
		3	Total annual runoff	km <sup>3</sup>		2000 2010	Warszawski et al. (2013)
		4	Population (per gridcell)	# people	CIESIN	2000	CIESIN, 2011 (gridded data)
					IIASA	2000 2010	IIASA, SSP database v1.0 (country population growth)v1.0 (country population growth)
		5	Water demand (water withdrawn from grid cell flow)	km <sup>3</sup>		2000 2010	Flörke et al. (2013); Warszawski et al. (2013)
		6	GDP (per grid cell)	\$ billion		2000	Nordhaus et al. (2006) (gridded data)
					SSP	2000 2010	Shared Socioeconomic Pathways (SSP)database v1.0 (country GDP change)
		7	Agric. land use (cultivation/livestock)	% area of grid cell	IIASA	2000 2010	Manuscript in preparation
8	Agric. Production (cultivation/livestock)	Gross value (\$)	IIASA	2000 2010	Manuscript in preparation		

Indicator	Subindicator	NO.	Sub-subindicator	Unit	Data Source	Year of Data	Reference
KD4	Flow alteration	9	Proportion of undisturbed pixels where disturbed flow is defined as monthly discharge being within a 20% difference from natural discharge, at least once per year.	%	Lit.	2010	Warszawski et al. (2013); Balazs Fekete, CUNY Environmental CrossRoads Initiative,bfekete@ccny.cuny.edu
	Environmental management	10	Wastewater treatment	%	Yale	2014	Yale Environmental Performance Index (2014) <a href="http://epi.yale.edu/">http://epi.yale.edu/</a>
		11	Pesticide regulation	%		2014	
		12	Forest loss since 2000	%		2014	
		13	Terrestrial protection	%		2014	

Indicator	Subindicator	NO.	Sub-subindicator	Thailand	Thailand's Agency
KD4	River health index	1	Based on model results		
		2	Threat to environmental water security		
		3	Total annual runoff	Total annual runoff	Royal Irrigation Department
		4	Population (per gridcell)	Population based on household registration in each province	Department of Provincial Administration
				Population in each district	
		5	Water demand (water withdrawn from grid cell flow)		From KD2 (economic water security)
		6	GDP (per grid cell)	GDP	Office of The National Economic and Social Development Board
		7	Agric. land use (cultivation/livestock)	Agricultural Land use in each province	Office of Agricultural Economics
				Agricultural Land use in each province	Land Development Department
8	Agric. Production (cultivation/livestock)	Agricultural Price at farm gate	Office of Agricultural Economics		

Indicator	Subindicator	NO.	Sub-subindicator	Thailand	Thailand's Agency
KD4	Flow alteration	9	Proportion of undisturbed pixels where disturbed flow is defined as monthly discharge being within a 20% difference from natural discharge, at least once per year.		
	Environmental management	10	Wastewater treatment		Pollution Control Department and Department of Local Administration
		11	Pesticide regulation		Pollution Control Department
		12	Forest loss since 2000	Forest Land Assessment by Province	Royal Forest Department
		13	Terrestrial protection	Terrestrial protection area	Department of National Parks, Wildlife and Plant Conservation